
REQUEST FOR PROPOSAL

(FOR DESIGN/BUILD CONTRACT)

SOLICITATION NO. DACA45-03-R-0036

37th B1-B SQUADRON OPERATIONS FACILITY FXBM 99-3001



ELLSWORTH AFB, South Dakota

JUNE 2003



U.S. Army Corps of Engineers
Omaha District

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DESIGN/BUILD SPECIFICATIONS FOR CONSTRUCTION OF

**37TH B1-B SQUADRON OPERATIONS FACILITY
ELLSWORTH AFB, SOUTH DAKOTA
FXBM 99-3001**

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SOLICITATION, OFFER, AND AWARD (Construction, Alteration, or Repair)	1. SOLICITATION NO.	2. TYPE OF SOLICITATION	3. DATE ISSUED	PAGE OF PAGES
	DACA45-03-R-0036	<input type="checkbox"/> SEALED BID (IFB) <input checked="" type="checkbox"/> NEGOTIATED (RFP)	4 JUN 2003	1 OF 4

IMPORTANT - The "offer" section on the reverse must be fully completed by offeror.

4. CONTRACT NO.	5. REQUISITION/PURCHASE REQUEST NO.	6. PROJECT NO.
7. ISSUED BY	CODE	8. ADDRESS OFFER TO
	CT	
U S ARMY ENGINEER DISTRICT, OMAHA 106 South 15th Street Omaha, Nebraska 68102-1618		U.S.ARMY CORPS OF ENGINEERS, OMAHA Attn: CONTRACTING DIVISION (CENWO-CT) 106 South 15th Street Omaha, Nebraska 68102-1618
9. FOR INFORMATION CALL:	A. NAME	B. TELEPHONE NO. (Include area code) (NO COLLECT CALLS)
	See SECTION 00100, Para. 15	See SECTION 00100, Para. 15

SOLICITATION

NOTE: In sealed bid solicitations "offer" and "offeror" mean "bid" and "bidder".

10. THE GOVERNMENT REQUIRES PERFORMANCE OF THE WORK DESCRIBED IN THESE DOCUMENTS (Title, identifying no., date):

The Offeror hereby agrees to do all the work described in these documents entitled:

37TH B1-B SQUADRON OPERATIONS FACILITY
FXBM 99-3001
ELLSWORTH AFB, SOUTH DAKOTA

RETURN WITH PROPOSAL: INFORMATION REQUIRED BY SECTION 00110; SECTION 00010 (SF1442); AND SECTION 00600

OTHER BONDING INFORMATION: SEE CONTRACT CLAUSES CLAUSE "PERFORMANCE AND PAYMENT BONDS".

* Copies (Item 13.A below) - See Section 01110 PROPOSAL SUBMISSION REQUIREMENTS, INSTRUCTIONS AND EVALUATION

11. The Contractor shall begin performance within <u>10</u> calendar days and complete it within <u>540</u> calendar days after receiving	
<input type="checkbox"/> award, <input checked="" type="checkbox"/> notice to proceed. This performance period is <input checked="" type="checkbox"/> mandatory, <input type="checkbox"/> negotiable. (See _____.)	
12A. THE CONTRACTOR MUST FURNISH ANY REQUIRED PERFORMANCE AND PAYMENT BONDS? (If "YES," indicate within how many calendar days after award in Item 12B.)	12B. CALENDAR DAYS
<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	10

13. ADDITIONAL SOLICITATION REQUIREMENTS:

A. Sealed offers in original and * copies to perform the work required are due at the place specified in Item 8 by 1400 (hour) local time 8 JUL 2003 (date). If this is a sealed bid solicitation, offers must be publicly opened at that time. Sealed envelopes containing offers shall be marked to show the offeror's name and address, the solicitation number, and the date and time offers are due.

B. An offer guarantee ☐ is, ☒ is not required.

C. All offers are subject to the (1) work requirements, and (2) other provisions and clauses incorporated in the solicitation in full text or by reference.

D. Offers providing less than 60 calendar days for Government acceptance after the date offers are due will not be considered and will be rejected.

14. NAME AND ADDRESS OF OFFEROR (Include ZIP Code) <div style="color: blue; font-weight: bold;">DUNS Number:</div>				15. TELEPHONE NO. (Include area code) 16. REMITTANCE ADDRESS (Include only if different than Item 14)			
CODE		FACILITY CODE					
17. The offeror agrees to perform the work required at the prices specified below in strict accordance with the terms of this solicitation, if this offer is accepted by the Government in writing within <u>60</u> calendar days after the date offers are due. (Insert any number equal to or greater than the minimum requirement stated in Item 13D. Failure to insert any number means the offeror accepts the minimum in Item 13D.) <div style="display: flex; justify-content: space-between;"> <div style="width: 15%;"> AMOUNTS </div> <div style="width: 85%;"> <div style="color: blue; font-weight: bold;">See Attached PRICING SCHEDULE</div> <div style="display: flex; justify-content: space-between;"> Contractor's Fax No. _____ CAGE CODE _____ </div> Contractor's E-Mail address _____ </div> </div>							
18. The offeror agrees to furnish any required performance and payment bonds.							
19. ACKNOWLEDGMENT OF AMENDMENTS (The offeror acknowledges receipt of amendments to the solicitation - give number and date of each)							
AMENDMENT NO.							
DATE							
20A. NAME AND TITLE OF PERSON AUTHORIZED TO SIGN OFFER (Type or print)				20B. SIGNATURE		20C. OFFER DATE	
AWARD (To be completed by Government)							
21. ITEMS ACCEPTED:							
22. AMOUNT				23. ACCOUNTING AND APPROPRIATION DATA			
24. SUBMIT INVOICES TO ADDRESS SHOWN IN (4 copies unless otherwise specified)			ITEM <div style="color: blue; font-weight: bold;">26</div>	25. OTHER THAN FULL AND OPEN COMPETITION PURSUANT TO <div style="display: flex; justify-content: space-between;"> <input type="checkbox"/> 10 U.S.C. 2304(c) () <input type="checkbox"/> 41 U.S.C. 253(c) () </div>			
26. ADMINISTERED BY <div style="color: blue; font-weight: bold;">U.S. Army Engineer District, Omaha</div> <div style="color: blue; font-weight: bold;">106 South 15th Street</div> <div style="color: blue; font-weight: bold;">Omaha, Nebraska 68102-1618</div>				27. PAYMENT WILL BE MADE BY <div style="color: blue; font-weight: bold;">USAED Omaha</div> <div style="color: blue; font-weight: bold;">c/o USACE Finance Center</div> <div style="color: blue; font-weight: bold;">5722 Integrity Drive</div> <div style="color: blue; font-weight: bold;">Millington, TN 38054-5005</div>			
CONTRACTING OFFICER WILL COMPLETE ITEM 28 OR 29 AS APPLICABLE							
<input type="checkbox"/> 28. NEGOTIATED AGREEMENT (contractor is required to sign this document and return _____ copies to issuing office.) Contractor agrees to furnish and deliver all items or perform all work, requisitions identified on this form and any continuation sheets for the consideration stated in this contract. The rights and obligations of the parties to this contract shall be governed by (a) this contract award, (b) the solicitation, and (c) the clauses, representations, certifications, and specifications incorporated by reference in or attached to this contract.				<input type="checkbox"/> 29. AWARD (Contractor is not required to sign this document.) Your offer on this solicitation, is hereby accepted as to the items listed. This award consummates the contract, which consists of (a) the Government solicitation and your offer, and (b) this contract award. No further contractual document is necessary.			
30A. NAME AND TITLE OF CONTRACTOR OR PERSON AUTHORIZED TO SIGN (Type or print)				31A. NAME OF CONTRACTING OFFICER (Type or print)			
30B. SIGNATURE		30C. DATE		31B. UNITED STATES OF AMERICA BY		31C. AWARD DATE	

PRICING SCHEDULE

<u>Item</u>	<u>Description</u>	<u>Quantity</u>	<u>Unit</u>	<u>Amount</u>
<u>BASIC</u>				
1.	Entire work complete for the 37TH B1-B Squadron Operations Facility FXBM 99-3001 - construction cost only, Excluding Basic Items 2 and 3 and Options listed below.	Job	1 LS	\$ _____
2.	Design Cost for Item No. 1	Job	1 LS	\$ _____
3.	All design requirements to support the purchase and installation of the O & M Funded Option Items. O-4, O-5 and O-6.	Job	1 LS	\$ _____
TOTAL AMOUNT (BASIC)				\$ _____

OPTIONS

<u>Item</u>	<u>Description</u>	<u>Quantity</u>	<u>Unit</u>	<u>Amount</u>
O-1	All work Complete for adding new parking Lot (design and construction)	Job	1 LS	\$ _____
O-2	All work Complete for landscaping option. (design and construction)	Job	1 LS	\$ _____
O-3	All work Complete for adding trellis at Ready Room and Heritage Room patios. (design and construction)	Job	1 LS	\$ _____
O-4	All work complete for purchase and Installation of Comprehensive Interior Design Items identified in Attachment 30.	Job	1 LS	\$ _____
O-5	All work complete for purchase and Installation of Equipment Items identified in Attachment 31.	Job	1 LS	\$ _____
O-6	All work complete for purchase and Installation of Appliances/Electronics Items identified in Attachment 32.	Job	1 LS	\$ _____
TOTAL AMOUNT (BASIC + OPTIONS)				\$ _____

NOTES:

1. See SECTION 00100, INSTRUCTIONS, CONDITIONS, & NOTICES TO OFFERORS FOR AWARD for evaluation of options. The Government reserves the right to exercise Option Items O-1, O-2 and O-3 within 30 days of issuance of Notice to Proceed. The Government reserves the right to exercise O & M Funded Option Items O-4, O-5 and O-6 within 450 days of issuance of Notice to Proceed.
2. Prices must be entered for all items of the schedule. Total amount offers submitted without prices being entered on the individual items will be considered non-responsive and subject to rejection. Additions will be subject to verification by the Government. In case of variation between the lump-sum prices and the total amount, the lump-sum prices will be considered the price.
3. The "Options" designated as "O- ____" are considered to be cost additions and therefore positive numbers should be entered. If the offeror determines the option results are a decreased price, a negative number should be entered. Evaluation of Options remains unchanged.

SECTION 00100

INSTRUCTIONS, CONDITIONS AND NOTICES TO OFFERORS
(July 2000, Revised March 2003)

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SECTION 00100

INSTRUCTIONS, CONDITIONS AND NOTICES TO OFFERORS

1 DEFINITION OF "DESIGN-BUILD" PROCESS

The "Design-Build Process is the procurement of a facility utilizing a Request for Proposal (RFP) to solicit for the design and construction of a facility by a single contractual entity. The contractual entity may be a "Design-Build" firm, or joint venture between an architect-engineer (A-E) and construction firm, or a construction management (CM) firm joint venture with an A-E and a construction firm. Joint ventures and/or teaming arrangements among two or more small business concerns will be recognized and are encouraged.

2 SOLICITATION RESTRICTIONS.

2.1 GENERAL CONTRACTOR.

This solicitation is unrestricted (not limited to small business concerns).

2.2 DESIGN AND CONSTRUCTION COSTS

The design and construction costs will be subject to the funds available for this project. The Government may not be able make an award, if the dollar amount set for this project is exceeded. The estimated design and construction cost of this project is between \$10,000,000 and \$13,000,000.

3 (FAR 52.217-5) EVALUATION OF OPTIONS (JUL 1990).

Except when it is determined in accordance with FAR 17.206(b) not to be in the Government's best interests, the Government will evaluate offers for award purposes by adding the total price for all options to the total price for the basic requirement. Evaluation of options will not obligate the Government to exercise the option(s).

4 (FAR 52.211-2) AVAILABILITY OF SPECIFICATIONS LISTED IN THE DOD INDEX OF SPECIFICATIONS AND STANDARDS (DODISS) AND DESCRIPTIONS LISTED IN THE ACQUISITION MANAGEMENT SYSTEMS AND DATA REQUIREMENTS CONTROL LIST, DOD 5010.12-L (DEC 1999)

Copies of specifications, standards, and data item descriptions cited in this solicitation may be obtained—

(a) From the ASSIST database via the Internet at
<http://assist.daps.mil>; or

(b) By submitting a request to the—

Department of Defense Single Stock Point (DoDSSP)
Building 4, Section D
700 Robbins Avenue
Philadelphia, PA 19111-5094
Telephone (215) 697-2667/2179
Facsimile (215) 697-1462.

(End of provision)

5 (FAR 52.215-1) INSTRUCTIONS TO OFFERORS--COMPETITIVE ACQUISITION (MAY 2001)

(a) *Definitions.* As used in this provision--

"Discussions" are negotiations that occur after establishment of the competitive range that may, at the Contracting Officer's discretion, result in the offeror being allowed to revise its proposal.

"In writing," "writing," or "written" means any worded or numbered expression that can be read, reproduced, and later communicated, and includes electronically transmitted and stored information.

"Proposal modification" is a change made to a proposal before the solicitation's closing date and time, or made in response to an amendment, or made to correct a mistake at any time before award.

"Proposal revision" is a change to a proposal made after the solicitation closing date, at the request of or as allowed by a Contracting Officer as the result of negotiations.

"Time," if stated as a number of days, is calculated using calendar days, unless otherwise specified, and will include Saturdays, Sundays, and legal holidays. However, if the last day falls on a Saturday, Sunday, or legal holiday, then the period shall include the next working day.

(b) *Amendments to solicitations.* If this solicitation is amended, all terms and conditions that are not amended remain unchanged. Offerors shall acknowledge receipt of any amendment to this solicitation by the date and time specified in the amendment(s).

(c) *Submission, modification, revision, and withdrawal of proposals.*

(1) Unless other methods (e.g., electronic commerce or facsimile) are permitted in the solicitation, proposals and modifications to proposals shall be submitted in paper media in sealed envelopes or packages (i) addressed to the office specified in the solicitation, and (ii) showing the time and date specified for receipt, the solicitation number, and the name and address of the offeror. Offerors using commercial carriers should ensure that the proposal is marked on the outermost wrapper with the information in paragraphs (c) (1) (i) and (c) (1) (ii) of this provision.

(2) The first page of the proposal must show--

(i) The solicitation number;

(ii) The name, address, and telephone and facsimile numbers of the offeror (and electronic address if available);

(iii) A statement specifying the extent of agreement with all terms, conditions, and provisions included in the solicitation and agreement to furnish any or all items upon which prices are offered at the price set opposite each item;

(iv) Names, titles, and telephone and facsimile numbers (and electronic addresses if available) of persons authorized to negotiate on the offeror's behalf with the Government in connection with this solicitation; and

(v) Name, title, and signature of person authorized to sign the proposal. Proposals signed by an agent shall be accompanied by evidence of that agent's authority, unless that evidence has been previously furnished to the issuing office.

(3) *Submission, modification, revision, and withdrawal of proposals.*

(i) Offerors are responsible for submitting proposals, and any modifications or revisions, so as to reach the Government office

designated in the solicitation by the time specified in the solicitation. If no time is specified in the solicitation, the time for receipt is 4:30 p.m., local time, for the designated Government office on the date that proposal or revision is due.

(ii) (A) Any proposal, modification, or revision received at the Government office designated in the solicitation after the exact time specified for receipt of offers is "late" and will not be considered unless it is received before award is made, the Contracting Officer determines that accepting the late offer would not unduly delay the acquisition; and—

(1) If it was transmitted through an electronic commerce method authorized by the solicitation, it was received at the initial point of entry to the Government infrastructure not later than 5:00 p.m. one working day prior to the date specified for receipt of proposals; or

(2) There is acceptable evidence to establish that it was received at the Government installation designated for receipt of offers and was under the Government's control prior to the time set for receipt of offers; or

(3) It is the only proposal received.

(B) However, a late modification of an otherwise successful proposal that makes its terms more favorable to the Government, will be considered at any time it is received and may be accepted.

(iii) Acceptable evidence to establish the time of receipt at the Government installation includes the time/date stamp of that installation on the proposal wrapper, other documentary evidence of receipt maintained by the installation, or oral testimony or statements of Government personnel.

(iv) If an emergency or unanticipated event interrupts normal Government processes so that proposals cannot be received at the office designated for receipt of proposals by the exact time specified in the solicitation, and urgent Government requirements preclude amendment of the solicitation, the time specified for receipt of proposals will be deemed to be extended to the same time of day specified in the solicitation on the first work day on which normal Government processes resume.

(v) Proposals may be withdrawn by written notice received at any time before award. Oral proposals in response to oral solicitations may be withdrawn orally. If the solicitation authorizes facsimile proposals, proposals may be withdrawn via facsimile received at any time before award, subject to the conditions specified in the provision at 52.215-5, Facsimile Proposals. Proposals may be withdrawn in person by an offeror or an authorized representative, if the identity of the person requesting withdrawal is established and the person signs a receipt for the proposal before award.

(4) Unless otherwise specified in the solicitation, the offeror may propose to provide any item or combination of items.

(5) Offerors shall submit proposals in response to this solicitation in English, unless otherwise permitted by the solicitation, and in U.S. dollars, unless the provision at FAR 52.225-17, Evaluation of Foreign Currency Offers, is included in the solicitation.

(6) Offerors may submit modifications to their proposals at any time before the solicitation closing date and time, and may submit modifications in response to an amendment, or to correct a mistake at any time before award.

(7) Offerors may submit revised proposals only if requested or allowed by the Contracting Officer.

(8) Proposals may be withdrawn at any time before award. Withdrawals are effective upon receipt of notice by the Contracting Officer.

(d) *Offer expiration date.* Proposals in response to this solicitation

will be valid for the number of days specified on the solicitation cover sheet (unless a different period is proposed by the offeror).

(e) *Restriction on disclosure and use of data.* Offerors that include in their proposals data that they do not want disclosed to the public for any purpose, or used by the Government except for evaluation purposes, shall—

(1) Mark the title page with the following legend:

This proposal includes data that shall not be disclosed outside the Government and shall not be duplicated, used, or disclosed—in whole or in part—for any purpose other than to evaluate this proposal. If, however, a contract is awarded to this offeror as a result of—or in connection with—the submission of this data, the Government shall have the right to duplicate, use, or disclose the data to the extent provided in the resulting contract. This restriction does not limit the Government's right to use information contained in this data if it is obtained from another source without restriction. The data subject to this restriction are contained in sheets [insert numbers or other identification of sheets]; and

(2) Mark each sheet of data it wishes to restrict with the

following legend:

Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this proposal.

(f) *Contract award.* (1) The Government intends to award a contract or contracts resulting from this solicitation to the responsible offeror(s) whose proposal(s) represents the best value after evaluation in accordance with the factors and subfactors in the solicitation.

(2) The Government may reject any or all proposals if such action is in the Government's interest.

(3) The Government may waive informalities and minor irregularities in proposals received.

(4) The Government intends to evaluate proposals and award a contract without discussions with offerors (except clarifications as described in FAR 15.306(a)). Therefore, the offeror's initial proposal should contain the offeror's best terms from a cost or price and technical standpoint. The Government reserves the right to conduct discussions if the Contracting Officer later determines them to be necessary. If the Contracting Officer determines that the number of proposals that would otherwise be in the competitive range exceeds the number at which an efficient competition can be conducted, the Contracting Officer may limit the number of proposals in the competitive range to the greatest number that will permit an efficient competition among the most highly rated proposals.

(5) The Government reserves the right to make an award on any item for a quantity less than the quantity offered, at the unit cost or prices offered, unless the offeror specifies otherwise in the proposal.

(6) The Government reserves the right to make multiple awards if, after considering the additional administrative costs, it is in the Government's best interest to do so.

(7) Exchanges with offerors after receipt of a proposal do not constitute a rejection or counteroffer by the Government.

(8) The Government may determine that a proposal is unacceptable if the prices proposed are materially unbalanced between line items or subline items. Unbalanced pricing exists when, despite an acceptable total evaluated price, the price of one or more contract line items is significantly overstated or understated as indicated by the application of cost or price analysis techniques. A proposal may be rejected if the Contracting Officer determines that the lack of balance poses an unacceptable risk to the Government.

(9) If a cost realism analysis is performed, cost realism may be

considered by the source selection authority in evaluating performance or schedule risk.

(10) A written award or acceptance of proposal mailed or otherwise furnished to the successful offeror within the time specified in the proposal shall result in a binding contract without further action by either party.

(11) The Government may disclose the following information in postaward debriefings to other offerors:

(i) The overall evaluated cost or price and technical rating of the successful offeror;

(ii) The overall ranking of all offerors, when any ranking was developed by the agency during source selection;

(iii) A summary of the rationale for award; and

(iv) For acquisitions of commercial items, the make and model of the item to be delivered by the successful offeror.

(End of provision)

6 CHANGES PRIOR TO RECEIVING OFFERS

The right is reserved, as the interest of the Government may require, to revise the specifications and/or Request For Proposal drawings prior to the date set for receiving offers. Such revisions will be announced by an amendment. It shall be the responsibility of the prospective offeror, subcontractor or supplier to obtain copies of amendments from the website listed in paragraph: PLAN HOLDER'S LIST below. The Government may (but not required) send an amendment notification to let prospective offerors know that an amendment has been issued.

7 (FAR 52.216-1) TYPE OF CONTRACT (APR 1984).

The Government contemplates award of a firm fixed price contract resulting from this solicitation.

(End of provision)

8 (FAR 52.204-6) DATA UNIVERSAL NUMBERING SYSTEM (DUNS) NUMBER (JUNE 1999)

(a) The offeror shall enter, in the block with its name and address on the cover page of its offer, the annotation "DUNS" followed by the DUNS number that identifies the offeror's name and address exactly as stated in the offer. The DUNS number is a nine-digit number assigned by Dun and Bradstreet Information Services.

(b) If the offeror does not have a DUNS number, it should contact Dun and Bradstreet directly to obtain one. A DUNS number will be provided immediately by telephone at no charge to the offeror. For information on obtaining a DUNS number, the offeror, if located within the United States, should call Dun and Bradstreet at 1-800-333-0505. The offeror should be prepared to provide the following information:

- (1) Company name.
- (2) Company address.
- (3) Company telephone number.
- (4) Line of business.
- (5) Chief executive officer/key manager.
- (6) Date the company was started.
- (7) Number of people employed by the company.
- (8) Company affiliation.

(c) Offerors located outside the United States may obtain the location and phone number of the local Dun and Bradstreet Information Services office from the Internet home page at <http://www.customerservice@dnb.com>. If an offeror is unable to locate a local service center, it may send an e-mail to Dun and Bradstreet at globalinfo@mail.dnb.com.

(End of provision)

9 SMALL BUSINESS SIZE STANDARD.

The small business size standard is gross annual receipts for its preceding 3 fiscal years did not exceed **\$28.5 million**.

10 NORTH AMERICAN INDUSTRY CLASSIFICATION SYSTEM (NAICS).

In accordance with Subsector 236 of the NAICS Manual, the work in this solicitation is assigned classification code 236210.

11 (DFARS 252.204-7004) REQUIRED CENTRAL CONTRACTOR REGISTRATION (NOV 2001)

(a) Definitions.

As used in this clause--

(1) "Central Contractor Registration (CCR database" means the primary DoD repository for contractor information required for the conduct of business with DoD.

(2) "Data Universal Numbering System (DUNS) number" means the 9-digit number assigned by Dun and Bradstreet Information Services to identify unique business entities.

(3) "Data Universal Numbering System +4 (DUNS+4) number" means the DUNS number assigned by Dun and Bradstreet plus a 4-digit suffix that may be assigned by a parent (controlling) business concern. This 4-digit suffix may be assigned at the discretion of the parent business concern for such purposes as identifying subunits or affiliates of the parent business concern.

(4) "Registered in the CCR database" means that all mandatory information, including the DUNS number or the DUNS+4 number, if applicable, and the corresponding Commercial and Government Entity (CAGE) code, is in the CCR database; the DUNS number and the CAGE code have been validated; and all edits have been successfully completed.

(b)(1) By submission of an offer, the offeror acknowledges the requirement that a prospective awardee must be registered in the CCR database prior to award, during performance, and through final payment of any contract resulting from this solicitation, except for awards to foreign vendors for work to be performed outside the United States.

(2) The offeror shall provide its DUNS or, if applicable, its DUNS+4 number with its offer, which will be used by the Contracting Officer to verify that the offeror is registered in the CCR database.

(3) Lack of registration in the CCR database will make an offeror ineligible for award.

(4) DoD has established a goal of registering an applicant in the CCR database within 48 hours after receipt of a complete and accurate application via the Internet. However, registration of an applicant submitting an application through a method other than the Internet may take up to 30 days. Therefore, offerors that are not registered should consider applying for registration immediately upon receipt of this solicitation.

(c) The Contractor is responsible for the accuracy and completeness of the data within the CCR, and for any liability resulting from the Government's reliance on inaccurate or incomplete data. To remain registered in the CCR database after the initial registration, the Contractor is required to confirm on an annual basis that its information in the CCR database is accurate and complete.

(d) Offerors and contractors may obtain information on registration and annual confirmation requirements by calling 1-888-227-2423, or via the Internet at <http://www.ccr.gov>.

(End of clause)

12 (FAR 52.236-28) PREPARATION OF PROPOSALS—CONSTRUCTION (OCT 1997)

(a) Proposals must be (1) submitted on the forms furnished by the Government or on copies of those forms; and (2) manually signed. The person signing a proposal must initial each erasure or change appearing on any proposal form.

(b) The proposal form may require offerors to submit proposed prices for one or more items on various bases, including—

- (1) Lump sum price;
- (2) Alternate prices;
- (3) Units of construction; or
- (4) Any combination of paragraphs (b)(1) through (b)(3) of this provision.

(c) If the solicitation requires submission of a proposal on all items, failure to do so may result in the proposal being rejected without further consideration. If a proposal on all items is not required, offerors should insert the words "no proposal" in the space provided for any item on which no price is submitted.

(d) Alternate proposals will not be considered unless this solicitation authorizes their submission.

(End of provision)

13 (FAR 52.233-2) SERVICE OF PROTEST (AUG 1996).

(a) Protests, as defined in section 33.101 of the Federal Acquisition Regulation, that are filed directly with an agency, and copies of any protests that are filed with the General Accounting Office (GAO), shall be served on the Contracting Officer (addressed as follows) by obtaining written and dated acknowledgement of receipt from District Counsel, 106 South 15th Street, Omaha, Nebraska 68102-1618.

(b) The copy of any protest shall be received in the office designated above within one day of filing a protest with the GAO.

14 (FAR 52.236-27) SITE VISIT (CONSTRUCTION) (FEB 1995).

(a) The clauses at 52.236-2, Differing Site Conditions, and 52.236-3, Site Investigations and Conditions Affecting the Work, will be included in any contract awarded as a result of this solicitation. Accordingly, offerors or quoters are urged and expected to inspect the site where the work will be performed.

(b) A site visit and pre-proposal conference will be held at the Officer's Club (Dakota's) at 2838 Arnold Drive, Ellsworth AFB on 17 June 2003. The conference will be held from 9:00 a.m. to 12:00 noon. The project site visit is scheduled to follow the conference. All Contractors must contact the **Ellsworth AFB Resident Office** (CENWO-CD-BH-E), U.S. Army Corps of Engineers, P.O. Box 669, Box Elder, South Dakota 57719, Telephone: (605) 923-2983 or Fax: (605) 923-2558 minimum 5 work days in advance of scheduled site visit and pre-proposal conference date to coordinate access to the base.

15 OFFEROR'S QUESTIONS AND COMMENTS.

Questions and/or comments relative to these documents should be submitted via e-mail or mailed to: U.S. Army Corps of Engineers, Omaha District, ATTN: CENWO-CT-M 106 South 15th Street, Omaha, NE 68102-1618. Comments should reach this office no later than 20 calendar days prior to the date set for receiving of proposals, if feasible, in order that changes, if needed, may be added by amendment. E-mail addresses, FAX numbers, items for question and points of contact are listed below. Phone calls with questions should be made between 8:30 a.m. and 3:30 p.m. (Central Standard Time) Monday through Friday.

Note: A courtesy copy of all questions shall be sent to the Contract Specialist (Contractual Matters Point of Contact), the Program Manager and

the Specifications Section (Technical Contents Points of Contact), except for Small Business questions. Small Business questions shall go to the Small Business Matters point of contact.

<u>Items for Question</u>	<u>Points of Contact/ Phone numbers/ FAX Numbers</u>	<u>E-mail Addresses</u>
Contractual Matters: Mel Vogt		mel.e.vogt@usace.army.mil
Ordering CD-Rom of the proposal documents (limit One per firm)/ amendments**/ Receipt of Proposals	402-221-4298 (phone) 402-221-4530 (fax)	
Planholder's List	See paragraph: PLAN HOLDER'S LIST, below.	
Small Business Matters	Hubert Carter 402-221-4110 (phone)	hubert.j.carter@usace.army.mil
Technical Contents Of Proposal Documents	Kevin Pace 402-221-4544 (phone) 402-221-4828 (fax)	kevin.p.pace@usace.army.mil
	OR	
	Specifications Section Doug Larsen 402-221-4547 402-221-3842	douglas.r.larsen@usace.army.mil
Site Inspection	See Paragraph: SITE INSPECTION, above	

**** - The Government may elect to send a notification that an amendment has been posted to the Government's web address, but is not required to. It shall be the Contractor's, Subcontractor's and Supplier's responsibility to check the Government's web address for amendments.**

15.1 PLAN HOLDER'S LIST.

The CD-Rom will provide a list of plan holders that have registered at the time the CD-Rom was created. It is offeror's responsibility to check for any updates to the plan holder's list, which is available at the following web address:

<http://ebs-nwo.wes.army.mil>

16 GENERAL DESCRIPTION OF WORK.

Scope of project includes all work required to design and construct the 37th B1-B, Squadron Operations Facility located at Ellsworth AFB, South Dakota. Work

shall be in accordance with Request for Proposal documents issued with this solicitation.

17 PROPOSAL SUBMISSION REQUIREMENTS AND INSTRUCTIONS.

See Section 00110 PROPOSAL SUBMISSION REQUIREMENTS, INSTRUCTIONS, AND EVALUATION.

17.1 WHO MAY SUBMIT

PROPOSALS MAY BE SUBMITTED BY:

(a) Firms formally organized as design/build entities, or by design firms and construction contractors that have formed a team specifically for this project, or any other interested party. In the latter case, a single design firm or construction contractor may offer more than one proposal by entering into more than one such association. For the purpose of this solicitation, no distinction is made between formally organized design/build entities and project specific design/build associations. Both are referred to as the "Offeror" or "Contractor" in this solicitation and after award of a contract.

(b) Any legally organized Offeror may submit a proposal, provided that the Offeror, or Offeror's subcontractor, have on its permanent staff professional architects and engineers registered in the appropriate technical disciplines and the requirements specified in the solicitation are met. All designs shall be under the direct supervision of appropriately licensed professionals.

17.2 GENERAL REQUIREMENTS

In order to effectively and equitably evaluate all proposals, the Contracting Officer must receive information sufficiently detailed to clearly indicate the proposal requirements. All proposals submitted will become upon receipt, the property of the U.S. Government and not be returned. If the Offeror desires to withdraw its proposal, all copies except the original will be retained. The Original will be returned in accordance with the requirements stated in FAR 52.215-1, Paragraph 6 of Instructions, Conditions and Notices to Offerors, Section 00100.

18 SOURCE SELECTION BOARD (SSB).

The Contracting Officer has established a Source Selection Board to conduct an evaluation of each proposal received in response to this Solicitation. The evaluation will be based exclusively on the merits and content of the proposal and any subsequent discussion required. The identities of the SSB personnel are confidential, and any attempt by the proposers to contact these individuals is prohibited.

19 PROPOSAL EVALUATION AND CONTRACT AWARD

See Section 00110 PROPOSAL SUBMISSION REQUIREMENTS, INSTRUCTIONS, AND

EVALUATION

20 TAXES - STATE OF SOUTH DAKOTA.

20.1 EXCISE TAX.

There is an excise tax on the total gross receipts of all prime contractors and subcontractors engaged in realty improvement contracts.

20.2 USE TAX.

Government furnished construction material used by the Contractor in the performance of the work is subject to use tax. The value of the material furnished is set forth in the SECTION 00800, SPECIAL CONTRACT REQUIREMENTS clause "Government-Furnished Property."

20.3 INFORMATION.

The "excise" and "use" taxes shall be included in the price or prices bid. For information concerning the taxes contact: Sales and Use Tax Division, Capital Lake Plaza, Pierre, South Dakota. Telephone 605-773-3311.

21 (FAR 52.232-18) AVAILABILITY OF FUNDS (APR 1984).

Funds are not presently available for this contract. The Government's obligation under this contract is contingent upon the availability of appropriated funds from which payment for contract purposes can be made. No legal liability on the part of the Government for any payment may arise until funds are made available to the Contracting Officer for this contract and until the Contractor receives notice of such availability, to be confirmed in writing by the Contracting Officer. (FAR 52.232-18)

REQUIRED CENTRAL CONTRACTOR REGISTRATION (CCR)

Register Now: Don't wait until you submit an offer on a solicitation. You must be registered to receive the contract award. It can often take 30 days for CCR to process your registration information.

Register One of Three Ways:

Internet: <http://www.ccr.gov>

Value Added Network (VAN) for EDI users: Contact your VAN for information. If you need to find a VAN look at http://www.acq.osd.mil/ec/ecip/van_list.htm

FAX or Mail: Call (888)227-2423 or (616)961-4725 to receive a registration package. FAX or mail the completed information to the CCR Assistance Center. It can take up to 30 days to process a faxed or mailed package.

CCR Assistance Center
74 Washington Street North, Suite 7
Battle Creek, MI 49017-3084
FAX: (616)961-7243

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SECTION 00110

**37TH B1-B SQUADRON OPERATIONS FACILITY
ELLSWORTH AFB, SOUTH DAKOTA**

PROPOSAL SUBMISSION REQUIREMENTS, INSTRUCTIONS, AND EVALUATION

INDEX

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- 3 SIZE OF PRINTED MATTER SUBMISSIONS.**
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 - 6.8 NOT USED
 - 6.9 TAB 8 - PRICE.
- 7. EVALUATION PROCESS**
- 8. DEBRIEFING**

**ATTACHMENTS: Performance Evaluation (Construction)
Sample Small Business Subcontracting Plan
Small Business Evaluation Criteria**

SECTION 00110

**37TH B1-B SQUADRON OPERATIONS FACILITY
ELLSWORTH AFB, SOUTH DAKOTA**

PROPOSAL SUBMISSION REQUIREMENTS, INSTRUCTIONS, AND EVALUATION

1 WHO MAY SUBMIT.

This solicitation is **UNRESTRICTED** and open to both large and small business participation.

The magnitude of construction for this project is between \$10 and \$13 Million dollars.

The North American Industry Classification System code for this project is 236210 with a size standard for small business of \$28.5 Million dollars gross annual receipts over 3 years.

In order to effectively and equitably evaluate all proposals, the Contracting Officer must receive information sufficiently detailed to clearly describe the proposal content. There will be no public opening. All proposals submitted will become upon receipt, the property of the U.S. Government and not be returned. All copies of the proposals will be destroyed as deemed appropriate by the Government. The original will be retained for contract files. If the offeror desires or requests to withdraw its proposal prior to the proposal closing date and time, all copies except the original will be retained. The Original will be returned in accordance with the requirements stated in FAR 52.215-1, Paragraph 4 of Instructions, Conditions and Notices to Offerors, Section 00100.

2 EVALUATION OF PROPOSALS.

a. All responsive proposals and documentation properly submitted will be evaluated. Proposals received will be evaluated on the basis of the factors stated in the solicitation to select the responsible offeror whose proposal is considered most advantageous and offers the best value to the Government. Proposals must be clear, concise, and must comply with the instructions in the solicitation. The government intends to evaluate and award a contract without discussions with offerors (except clarifications as described in FAR 15.306(a)). Therefore, the offeror's initial proposal should contain the offeror's best terms from a cost or price and technical standpoint. The government reserves the right to conduct discussions if the Contracting Officer later determines them to be necessary.

b. The most highly rated proposals will make up the competitive range if award is not made from initial proposal review. (See FAR 15.306(c)(1).

c. Evaluations will be conducted in accordance with the Tradeoff Process, FAR 15.101-1. Tabs 1 through 7 will be rated using an adjectival methodology with a narrative assessment. Tab 8 (Price), will be subjectively evaluated after consensus rating of Tabs 1-7 by the Source Selection Evaluation Board (SSEB). Proposal evaluation is a "best value" assessment of the proposal and the offeror's ability to perform the resultant contract successfully. Proposals will be evaluated to determine ratings supported by narratives, and to identify strengths, weaknesses, and deficiencies of each proposal.

The following ratings will be used to evaluate Tabs 1 through 7:

Exceptional. Proposer possesses virtually all of the desired attributes and qualities set forth in Paragraph 6 of the RFP, for the particular factor being evaluated. Strengths are present indicating maximum benefit to the government and no significant weaknesses are indicated.

Above Average. Proposer possesses, many of the desired attributes and qualities set forth in Paragraph 6 of the RFP, for the particular factor being evaluated. Strengths are present indicating significant benefit to the government. The submitted proposal has only minor weaknesses that have no impact on the proposal as a whole and do not require correction.

Average. Proposer possesses some of the desired attributes and qualities set forth in Paragraph 6 of the RFP for the factor being evaluated. Strengths are present indicating some benefits to the government. Any weaknesses noted have only a minor impact on the proposal and are easily correctable.

Marginal. Proposer possesses only a few of the desired attributes and qualities expressed in Paragraph 6 of the RFP, for the factor being evaluated. The Government may still receive benefit from the proposal submitted. Weaknesses and deficiencies noted are correctable without major revision of the proposal.

Unacceptable. Proposer lacks the desired attributes and qualities necessary to receive a higher rating. Weaknesses and/or deficiencies noted are uncorrectable without a major revision of the proposal.

NOTE: For TABS 3 and 5, “Past Performance”, a “neutral” rating will be awarded when no past performance records are provided or otherwise available. The Federal Acquisition Regulation (FAR) 15.305(a)(2)(iv) states, “In the case of an offeror without a record of relevant past performance or for whom information on past performance is not available, the offeror may not be evaluated either favorably or unfavorably on past performance.”

3 SIZE OF PRINTED MATTER SUBMISSIONS.

All written portions shall be in 8-1/2" x 11" format.

4 WHERE TO SUBMIT.

Offerors shall submit their proposal packages to the USACE Contracting Activity at the address shown in Block 8 of Standard Form 1442.

5 SUBMISSION DEADLINE.

Submittals must be received in the Omaha District Offices no later than the date found on the Standard Form SF 1442, Page 00010-1, Item 13A. At this time, it will be announced that receipt of proposals is closed. Official time will be established by the clock located in the area where proposals are received. Any proposal received after this time will be considered a late proposal and will not be evaluated unless FAR requirements of 52.215-1 have been met concerning late bids/proposals.

For those offerors who will hand-carry their proposals to the Omaha District Office, the following provisions apply. Due to heightened security at Government installations, those offerors who have their proposals hand-delivered shall contact Mr. Mel Vogt, Contract Specialist at (402) 221-4298

or (402) 221-4100 prior to delivering their proposal to the U.S. Army Corps of Engineer District, Omaha, Old Federal Building, 106 south 15th Street, Omaha, NE 68102-1618.

On the date specified and for thirty (30) minutes prior to the time specified on the Standard Form (SF) 1442, page 00010-1, Item 13A, a Contracting Representative will be in the lobby of the Old Federal Building to accept proposals.

6. PROPOSAL REQUIREMENTS, SUBMISSION FORMAT, AND EVALUATION FACTORS.

Offerors are required to submit the **original and five (5) copies** of their proposal, each consisting of a 3-ring binder with Tabs (dividers) separating the sections (Tabs 1 through 8). Tab 8 shall not be included in the original and five copies submission. Tab 8 shall be in a separate binder. Only the original of the binder containing Tab 8 should be submitted as a separate binder. Evaluation factors (Tabs 1-8) shall be as described herein:

Tab 1 - Design Experience

Tab 2 - Design Personnel

Tab 3 - Past Performance (Design)

Tab 4 - Construction Experience

Tab 5 - Past Performance (Construction)

Tab 6 - Construction Personnel

Tab 7 Utilization of Small Disadvantaged Business Concerns

Tab 8 - Price (Separate Binder, original only)

All proposals should address the evaluation factors stated herein and every binder should also contain: Name/Address/Telephone Number of the Offeror, Table of Contents, List of Tables (if required), List of Figures (if required), and List of Appendices (if required). Proposal clarity, organization (as requested in this solicitation) and cross referencing are mandatory. Submitted material incorporated by reference will not be evaluated. The offeror should submit in the proposal the requested information specified below. Tabs 1 through 7 are of equal importance and **all evaluation factors other than Price, when combined are approximately equal to Price (Tab 8)**. An unsatisfactory evaluation rating for any tab, or combination of unsatisfactory ratings of different tabs, may cause the proposal to be evaluated overall as unsatisfactory. Price (Tab 8) will be evaluated in accordance the requirements listed in paragraph: TAB 8 - Price, Paragraph **6.9** below.

6.1 TAB 1 - DESIGN EXPERIENCE

6.1.1 Submission Requirements. Design team should have recent experience in designing facilities of similar scope and complexity as this project. Similar project types are considered facilities used to house maintenance operations, administrative offices, large group meetings, parts storage, computer operations, and redundant power and cooling systems. Submit up to 4 projects designed by the design team that most clearly illustrate its experience, preferably in designing facilities similar to the Squadron Operations Facility. These projects should demonstrate

applicable military design experience and design-build experience. No more than 4 projects may be submitted. Include a brief description for each project example of 1-2 pages. Project examples may also include similar private sector design-build facilities, design-bid-build military projects and private sector, design-bid-build facilities. Projects should be at least \$5,000,000 in construction cost and for which construction was completed within the past 5 years of the date that proposals for the Squadron Operations Facility are due. Project examples should include past experience as a prime design agent or joint venturer. If a joint venture has been formed for this contract only, include a brief description of previous experience with the Construction Contractor and provide a fully executed Joint Venture Agreement. Each project example should include: a description of the project; construction contract award amount; final construction cost; location; date when the project was started; original contract finish date and actual finish date (if finished). Partially completed project examples submitted will be evaluated less favorably than those examples submitted that are completed. Narratives of each project should include a brief overview of each project and its relevance to this project. All examples should also contain the name, address, telephone and fax number of a representative of the customer (as well as one alternate individual not affiliated with your firm) familiar with your firm's experience on the project that can verify the experience cited. If you do not want the data submitted disclosed by the Government, follow the procedure specified in Section 00100 INSTRUCTIONS, CONDITIONS AND NOTICES TO OFFERORS paragraph 5(e): RESTRICTION ON DISCLOSURE AND USE OF DATA.

6.1.2 Evaluation

The experience of the offeror's design team will be evaluated. Previous experience (Project examples) on military, government agency design-build and design-bid-build, and/or private sector design-build and design-bid-build contracts are areas of consideration. Relatable military design-build project experience will be evaluated more favorably than projects that are not military design projects or design-build. Proposers whose design and construction entities show experience working together on similar size or type projects will be more favorably evaluated. The government preference is that project examples submitted be of completed projects (i.e. construction complete). Those project examples submitted that are partially completed will be evaluated by means of contact with the project owner to determine contractor performance to point of completion. Partially completed project examples will be evaluated less favorably than those examples submitted that are completed. Submission of fewer than 4 projects will reduce the proposer's rating for this factor.

6.2 TAB 2 - DESIGN PERSONNEL

6.2.1 Submission Requirements. Include resumes of lead and support design personnel who will work on this project. The design team should be composed of project managers, registered architects, or engineers, or a multi-discipline design firm with project managers, registered architects and engineers on staff providing complete facility design services. Project Managers and Lead designers should be registered professional architects or engineers - with at least 5 years experience as a registered professional in the design of similar projects. Include examples of projects the Project Manager and lead designers/design team have worked on together. Preferably include at least one example of a military construction project for a U.S. Government Agency (similar to this design-build military Squadron Operations facility). Project examples may also include similar private sector design-build facilities, design-bid-build military construction projects, and private sector design-bid-build facilities. Projects should be at least \$5,000,000 in construction cost and completed within the past 5 years of the date that proposals for the Squadron Operations Facility are due. The design team should include the following disciplines:

- Project Manager (Registered Architect or Engineer)
- Registered Architect
- Registered Structural Engineer with training related to the 1997 National Earthquake Hazard Reduction Program (NEHRP)
- Registered Mechanical Engineer
- Registered Electrical Engineer
- Registered Fire Protection Engineer
- Registered Civil Engineer
- Registered Landscape Architect
- Interior Designer - Certified by the National Council of Interior Designers Qualifications (NCIDQ)

Resumes for each person should be no more than 1-2 pages in length.

If, because of reasons beyond the control of the design team, the named individuals are not able to fulfill this obligation, replacement personnel with similar education and experience shall be presented for acceptance by the Contracting Officer.

6.2.2 Evaluation

Qualifications of key design personnel assigned to this project (experience, professional registration and education as important factors) will be evaluated. Relatable military design-build project experience for lead personnel will be evaluated more favorably than projects, which are not military, or design-build. In descending order of importance, lower ratings will be given for relatable private sector design-build, military design, and private sector design experience. More favorable ratings are awarded for projects where personnel have previous experience with other members of the design team.

6.3 TAB 3 - PAST PERFORMANCE (DESIGN)

6.3.1 Submission Requirements

Provide copies of all Performance Evaluations (Architect-Engineer) received on DOD design projects within the last 5 years. Copies of records contained in the Corps of Engineers Architect-Engineer Contract Administration Support system (ACASS) database shall be submitted. The proposal shall contain these ACASS evaluations. For projects cited in Tab 1, which were designed for other federal government entities, submit the performance appraisal report used by that government entity. For all private sector projects cited in Tab 1, submit a completed Performance Evaluation Sheet (a blank copy is attached to this section) completed by an owner or owner's representative who is not affiliated with your firm. The Government reserves the right to pull all copies of ACASS records contained in the ACASS Evaluation Database. Copies of records contained in the Corps of Engineers ACASS (Architect-Engineer Contract Administration Support System) Database may be requested by fax on company letterhead at the following telefax number: (503) 808-4596. The proposal shall contain these ACASS evaluations.

6.3.2 Evaluation

Past Performance ratings received on DOD, other Government entities and private sector work will be evaluated. Excellent evaluations will be evaluated more favorably than evaluations of Above Average, Average, Below Average, and Poor. For projects cited in Tab 1, which were designed for other government entities, submit the performance appraisal reports used by that government

entity. For all private sector projects cited in Tab 1, submit a completed Performance Evaluation Sheet (a blank copy is attached to this section) completed by an owner or owner's representative who is not affiliated with your firm. If an offeror has no past performance ratings in ACASS, Performance Evaluation Worksheets, or other Architect-Engineering Performance Rating Systems, a "neutral" rating will be given. ACASS Ratings will be given more weight than equivalent performance ratings for other types of evaluations. The Government may, at its discretion, contact references cited to verify the information contained therein. The Government reserves the right to pull all copies of ACASS records contained in the ACASS Evaluation Database. Copies of records contained in the Corps of Engineers ACASS (Architect-Engineer Contract Administration Support System) Database may be requested by fax on company letterhead at the following telefax number: (503) 808-4596. The proposal shall contain these ACASS evaluations.

6.4 TAB 4 – CONSTRUCTION EXPERIENCE.

6.4.1 Submission Requirements. In this tab, the offeror should submit up to four (4) project examples of construction projects which best illustrate its construction component's experience on projects of a similar type as the Squadron Operations Facility Project. Similar project types are considered facilities used to house maintenance operations, administrative offices, large group meetings, parts storage, computer operations, and redundant power and cooling systems. In addition, the offeror should cite any past experience with stringent phasing and coordination restrictions. Each project example should consist of a one or two page narrative of the project, discussing the project and providing specifics as noted herein. No more than 4 project examples may be submitted. If more than four examples are submitted, only the first four will be evaluated. Each project example should have a construction dollar value of greater than \$5 million and have been constructed within the past five (5) years. Indefinite-Delivery, Indefinite Quantity (IDIQ) Task Orders may not be summed to meet the minimum construction dollar value identified herein. Only those project examples for which the construction component was the prime contractor should be submitted. The government preference is that project examples submitted be of completed projects (i.e. construction complete). Those project examples submitted that are partially completed will be evaluated by means of contact with the project owner to determine contractor performance to point of completion. Each example should include: a description of the project; construction contract award amount; final construction cost; location; date when the project was started; original contract finish date and actual finish date (if finished). Narratives of each project should include a brief overview of each project and its relevance to this project. All examples should also contain the name, address, telephone and fax number of a representative of the customer (as well as one alternate individual not affiliated with your firm) familiar with your firm's experience on the project that can verify the experience cited. If you do not want the data submitted disclosed by the Government, follow the procedure specified in Section 00100 INSTRUCTIONS, CONDITIONS AND NOTICES TO OFFERORS paragraph 5 (e): RESTRICTION ON DISCLOSURE AND USE OF DATA.

6.4.2 Evaluation. The Construction component's experience in construction of facilities similar to the Squadron Operations Facility Project will be evaluated. Higher evaluation ratings may be given for those projects that are similar to the Squadron Operations Facility Project which clearly demonstrate a contractor's capabilities to construct a facility of this size. The preceding is performance information not experience. In addition, those offers that include military construction projects of similar type may be rated more favorably than those without such construction similarity. If less than 4 construction projects are included in the proposal, the proposal will be evaluated less favorably than those that submit four examples. Omission of requested information will result in lower ratings than those who provide all information identified in the paragraph above. The government preference is that project examples submitted

be of completed projects (i.e. construction complete). Those project examples submitted that are partially completed will be evaluated by means of contact with the project owner to determine contractor performance to point of completion. Partially completed project examples will be evaluated less favorably than those examples submitted that are completed. Proposers whose construction entities show experience working together with the design entity on similar size or type projects will be more favorably evaluated.

6.5 TAB 5 - PAST PERFORMANCE, CONSTRUCTION.

6.5.1 Submission Requirements. Submit past performance ratings. All CCASS ratings for all Corps of Engineer projects constructed by the proposer in the past five years should be submitted. For projects cited in Tab 4, which were constructed for other federal government entities, submit the performance appraisal reports used by that government entity. For all private sector projects cited in Tab 4, submit a completed Performance Evaluation Sheet (a blank copy is attached to this section) completed by an owner or owner's representative and who is not affiliated with your firm. If an offeror has no past performance ratings in CCASS, or other Construction Performance Rating System used by other government entities and no Performance Evaluation sheets are available for private sector work, a neutral rating will be given (see definition of Neutral Rating, Paragraph 2 d (10) above). The government reserves the right to pull CCASS records contained in the Corps of Engineers CCASS database for evaluation. Copies of records contained in the Corps of Engineers CCASS Database may be requested by fax on company letterhead at the following telefax number: (503) 808-4596.

6.5.2 Evaluation. Higher evaluation ratings may be awarded for Excellent evaluations. In descending order, lower ratings may be given for past evaluations of Above Average, Satisfactory, Marginal, and Unsatisfactory. If an offeror has no past performance ratings in CCASS, Performance Evaluation Worksheets, or other Construction Performance Rating Systems, a "neutral" rating will be given. CCASS Ratings will be given more weight than equivalent performance ratings for other types of evaluations. The Government may, at its discretion, contact references cited to verify the information contained therein.

6.6 TAB 6 - CONSTRUCTION PERSONNEL

6.6.1 Submission Requirements.

In this tab, the offeror should submit the names and resumes for Prime Contractor, key construction personnel that will be assigned to this project. In addition, provide a summary of the proposed duties and responsibilities of these individuals that clearly indicates separate duties and responsibilities for each individual. No one Prime Contractor Key Construction Person proposed should have more than one position. This portion of the tab should include data on the following personnel of the Prime Contractor:

Project Manager
Project Superintendent
Contractor Quality Control (CQC) System Manager

The proposal should clearly present the credentials of each person and show that each compares to the desired attributes listed below. Resumes of 1 – 2 pages in length, should include examples of project experience (including what capacity the individual served on each project), as well as the dates employed on each project, and the monetary size of each project cited as experience. In addition, the educational qualifications of the proposed personnel should be submitted.

Project Manager. The Project Manager should be a degreed or registered engineer, architect, or graduate construction manager with at least 5 years experience as a Project Manager on projects similar in monetary size and/or scope to this project.

Project Superintendent. The Project Superintendent should be an experienced construction person having at least 5 years experience as a Project Superintendent on projects similar in size and/or scope to this project.

Contractor Quality Control (CQC) System Manager. The Contractor Quality Control System (CQC) Manager should have a minimum of 5 years experience as a CQC System Manager on projects similar in size and/or scope to the Squadron Operations Facility Project.

6.6.2 Evaluation.

Qualifications of key prime contractor, construction personnel (Project Manager, Project Superintendent and Contractor Quality Control (CQC System Manager) assigned to this project will be considered. Higher evaluation ratings may be given for military construction project experience, longevity of experience at the position being proposed, education and experience on projects similar to the Squadron Operations Facility Project. Proposers that offer Prime Construction Contractor Key Personnel for more than one position will be evaluated less favorably. In addition, the proposed personnel will be reviewed for the desired qualifications. Evaluation ratings may be reduced for those qualifications, which are not met, and for resumes not providing the information requested.

6.7 TAB 7 - UTILIZATION OF SMALL DISADVANTAGED BUSINESS CONCERNS.

Note: The information requested in this Tab 7 is not a request for the Small Business Subcontracting Plan prescribed by Federal Acquisition Regulation clause 52.219-9, Small Business Subcontracting Plan. See Paragraph 6.9.1 for information having to do with the submission of that plan. The evaluation of utilization and participation of “Small Disadvantaged Business (SDB) concern prescribed by this paragraph [FAR 15.304 (c) (4)] is separate and distinct from the requirement at Federal Acquisition Regulation (FAR) Clause 52.219-9, Small Business Subcontracting Plan.

Notice to Small Business Concerns: An Offeror responding to this solicitation as a “Small Business Concern” should include a statement at this tab indicating that it qualifies as a “Small Business Concern” under the criteria and size standard for North American Industry Classification System (NAICS) 236210.

6.7.1. Definitions:

a. Small Business Concerns. For the purpose of this section, “Small Business Concern” refers to a business that qualifies as “small” under the criteria and size standard of the North American Industry Classification System (NAICS) code 236210. The definition encompasses “Small Business” (SB), “Small Disadvantaged Business” (concerns owned and controlled by socially and economically disadvantaged individuals), “Woman Owned Small Business”(concerns owned and by a woman), “Service Disable Veteran Business” (concerns controlled by service disabled veteran).

b. Other than Small Business Concerns. For the purpose of this section, “Other Than Small” refers to a concern, entity or organization that does **not** qualify as a “Small Business

Concern” under the criteria and size standard for the applicable North American Industry Classification System (NAICS) code assigned to this solicitation. The definition encompasses “Large Business Concerns”, other for-profit and non-profit organizations, state and local governments.

c. Prime Contractor. For the purpose of this section, a prime contractor refers to “Other Than Small” and “Small Business Concerns”.

d. Offeror. For the purpose of this section, offeror refers to both “Other Than Small” and “Small Business Concerns”.

6.7.2 Submission Requirements. The Offeror, if “**Other than a Small Business Concern**” should demonstrate the extent of participation of “Small Disadvantaged Business”(SDB) in the performance of the resultant contract.

6.7.2.1 Required Information: Tab 7 should include the following information.

a. Demonstrate utilization and participation of Small Disadvantaged Business concerns. An “Other than Small” must clearly state the factors that demonstrate a strong commitment to utilize SDB in the resultant contract. The SDB goal of 8.9% of subcontracted dollars expended is considered reasonable and obtainable. A developed goal meeting or exceeding the 8.9% will receive a favorable rating.

b. Past Performance in Meeting Small Business Goals. Offerors must demonstrate how goals for SB, SDB, WOSB, SDV and HubZone participation were satisfied on previous contracts. Offerors should submit data to demonstrate how small business goals on previous contracts were satisfied. . The data provided should include: (1) Client/Customer (2) Contract/Identification Number (3) Project Description (4) Contract Amount (5) Goals established for that project (6) Actual percentages met for that contract (7) Reference or Point of Contract (to include address and telephone number).

6.7.3 Evaluation. Proposals of “**Other Than Small**” business concerns will be evaluated on their utilization of “Small Disadvantaged Business”. Those firms providing all information requested, demonstrating a strong commitment to utilization of Small Business, and demonstrating past performance in meeting small business goals will be given higher ratings than those that do not. The information listed below is in descending order of importance for evaluation purposes.

a. Demonstrated the extent of participation of Small Disadvantaged Business Concerns in performance of the resultant contract.

b. Past Performance in Meeting Small Business Goals.

6.8 NOT USED.

6.9 TAB 8 – PRICE.

6.9.1 Submission Requirements. The offeror should submit **only an original** of the following information **in a separate binder** (Tab 8). Five copies of the information in this Tab **ARE NOT** required and should not be submitted. The binder shall contain the following information:

a. Section 00010, Solicitation/Contract Form and Pricing Schedule. Include the completed SF Form 1442 (Pages 00010-1 and 00010-2) of the RFP, along with the completed Pricing Schedule. The total cost for the construction including all options will be considered for evaluation. Proposed price for the construction of this project will be used in evaluation of a

competitive range if one is established. Price will be subjectively evaluated for reasonableness and affordability considering total cost of the basic and all option items to reach the best value for the Government, price and other factors considered.

Note: Other elements requested in Tab 8 will not be used in the Best Value Analysis, but are required submittal as part of the proposal.

b. Section 00600, Representations, Certifications and Other Statements of Offerors.

This item is not considered for evaluation, but is a required submittal item. The information requested in this Section needs to be fully completed. The submitted information will be reviewed for completeness by Contracting Personnel.

c. Pre-Award Survey Information (Local Provision) (Sep 93). In accordance with FAR Clause 52.228-15 PERFORMANCE AND PAYMENT BONDS, the following information should be submitted with each offer. Submission of this information will expedite the award process.

(1) Financial:

- a. Name, address, and fax number of Financial Institution
- b. Name and phone number of finance individual (primary and alternate) to be contacted for information

(2) Bonding Information: Provide the name, address, regular phone number and fax number of the offeror's Surety Company.

d. Sub-Contracting Plan. If your firm is a large business and your proposal **exceeds \$1,000,000** or more for construction, a Small Business Subcontracting Plan is required prior to award.. A SAMPLE Small Business Subcontracting Plan is attached to the solicitation. **This plan is not a part of the technical evaluation. However, an acceptable and approved Sub-Contracting plan must be in place prior to award of a contract.** Submission with the proposal will expedite contract award. The plan will be reviewed for compliance with the established criteria in Appendix CC, attached to the solicitation.

7. EVALUATION PROCESS

a. As set forth above, this is a "Best Value" procurement wherein the responsible proposer whose proposal provides the greatest overall benefit in response to the RFP requirements, will be awarded a contract. "Best Value" is defined as the expected outcome of an acquisition that in the Government's estimation, provides the greatest overall benefit in response to the requirement, Technical, Price and other factors considered. In order to determine the proposal that offers the "Best Value" the Government may employ a "trade off" process whereby award to other than the lowest priced offeror or other than the highest technically rated offer may be made. Trade-off Process is defined as a process appropriate when it may be in the best interest of the Government to consider award to other than the lowest priced offeror or other than the highest technically rated offer. It permits trade-offs among cost or price and non-cost factors and allows the Government to accept other than the lowest price proposal. The perceived benefits of the higher priced proposal shall merit the additional cost and the rationale for trade-offs must be documented in the file.

b. The Government intends to award a contract on the basis of initial offers received, without discussions. Therefore, each initial offer should contain the offeror's best terms from a price and technical standpoint. However, if upon completion of initial proposal

evaluation, discussions are determined to be needed, the Government will establish a competitive range.. The competitive range shall be determined on the basis of the factors and sub-factors stated in the solicitation and shall include the highest rated proposals. Offerors submitting proposals determined outside of the competitive range (lacking a reasonable chance of being selected for contract award) will be notified in writing at the earliest practicable time. If discussions as defined in paragraph 2(d)(8) above are necessary, written and/or verbal, they will be conducted with all firms in the competitive range once a written Determination to hold such discussions has been approved by the Contracting Officer. FAR 15.306(a)(3) and the Comptroller General Decisions indicate that all content of discussions are a matter within the Contracting Officer's judgment. Discussions involve an exchange of information essential to determining the acceptability of a proposal. During the exchange of information, offerors must be informed of all deficiencies and significant weaknesses in their proposals and offered an opportunity to revise their proposals. No technical leveling, transference or auction techniques shall result from discussions. Discussions will be concluded as of the date specified for receipt of a Final Revised Proposal from those offerors determined to be in the competitive range.

c. Upon completion of discussions, the Government shall issue to all offerors involved in the discussions a request for final proposal revisions specifying the exact date and time for submission of the revision. Any verbal revisions to proposals made during the course of discussions must be included in the offeror's written Final Revised Proposal. Any verbal revisions not included in the written final revision will not be considered in re-evaluating the proposals. Any verbal request for a Final Revised Proposal shall be confirmed in writing. The confirmation shall include:

- (1) Notice that discussions are concluded.
- (2) Notice that this is the opportunity to submit a Final Revised Proposal.
- (3) Establishment of a common cutoff date and time that allows the offerors reasonable opportunity for submission of written Proposal revisions.
- (4) Notice that Proposal Revisions, and modifications thereto, must be received by the date, time, and in the place specified in the notice, or they are subject to the Late Offers provision in the solicitation in Section 00100.

Following the evaluation of final proposal revisions, the Government will select the offeror whose initial and final proposal revision presents the Best Value considering only the factors and sub-factors included in the solicitation.

8. DEBRIEFING

Each offeror, successful or unsuccessful, is afforded the opportunity, in accordance with Federal Acquisition Regulation (FAR) 15.505 and 15.506, to receive one debriefing. Offerors are required to submit a written request for debriefing and discussion of the evaluation of its proposal within three (3) calendar days after receipt of notice of award or exclusion from the competitive range. The debriefing of all offerors, successful or unsuccessful, will be conducted by the Contracting Officer in accordance with the FAR. Each offeror shall be provided only one debriefing, either post award or pre-award, at their choosing. The Contracting Specialist will coordinate and schedule the debriefings. Debriefing participation will include the Contracting Officer, chairperson of the SSEB, and Contracting Specialist with additional support from other members of the SSEB as required.

PERFORMANCE EVALUATION (CONSTRUCTION)				1. CONTRACT NUMBER 2. CEC NUMBER	
IMPORTANT: Be sure to complete Part III - Evaluation of Performance Elements on reverse.					
PART I - GENERAL CONTRACT DATA					
3. TYPE OF EVALUATION (<i>X one</i>) <input type="checkbox"/> INTERIM (<i>List percentage _____ %</i>) <input type="checkbox"/> FINAL <input type="checkbox"/> AMENDED				4. TERMINATED FOR DEFAULT <input type="checkbox"/>	
5. CONTRACTOR (<i>Name, Address, and ZIP Code</i>)				6.a. PROCUREMENT METHOD (<i>X one</i>) <input type="checkbox"/> SEALED BID <input type="checkbox"/> NEGOTIATED b. TYPE OF CONTRACT (<i>X one</i>) <input type="checkbox"/> FIRM FIXED PRICE <input type="checkbox"/> COST REIMBURSEMENT <input type="checkbox"/> OTHER (<i>Specify</i>)	
7. DESCRIPTION AND LOCATION OF WORK					
8. TYPE AND PERCENT OF SUBCONTRACTING					
9. FISCAL DATA		a. AMOUNT OF BASIC CONTRACT \$	b. TOTAL AMOUNT OF MODIFICATIONS \$	c. LIQUIDATED DAMAGES ASSESSED \$	d. NET AMOUNT PAID CONTRACTOR \$
10. SIGNIFICANT DATES		a. DATE OF AWARD	b. ORIGINAL CONTRACT COMPLETION DATE	c. REVISED CONTRACT COMPLETION DATE	d. DATE WORK ACCEPTED
PART II - PERFORMANCE EVALUATION OF CONTRACTOR					
11. OVERALL RATING (<i>X appropriate block</i>) <input type="checkbox"/> OUTSTANDING <input type="checkbox"/> ABOVE AVERAGE <input type="checkbox"/> SATISFACTORY <input type="checkbox"/> MARGINAL <input type="checkbox"/> UNSATISFACTORY (<i>Explain in Item 20 on reverse</i>)					
12. EVALUATED BY a. ORGANIZATION (<i>Name and Address (Include ZIP Code)</i>) b. TELEPHONE NUMBER (<i>Include Area Code</i>)					
c. NAME AND TITLE			d. SIGNATURE		e. DATE
13. EVALUATION REVIEWED BY a. ORGANIZATION (<i>Name and Address (Include ZIP Code)</i>) b. TELEPHONE NUMBER (<i>Include Area Code</i>)					
c. NAME AND TITLE			d. SIGNATURE		e. DATE
14. AGENCY USE (<i>Distribution, etc.</i>)					

PART III - EVALUATION OF PERFORMANCE ELEMENTS

N/A = NOT APPLICABLE O = OUTSTANDING A = ABOVE AVERAGE S = SATISFACTORY M = MARGINAL U = UNSATISFACTORY

15. QUALITY CONTROL		N/A	O	A	S	M	U	16. EFFECTIVENESS OF MANAGEMENT		N/A	O	A	S	M	U
a. QUALITY OF WORKMANSHIP								a. COOPERATION AND							
b. ADEQUACY OF THE CQC PLAN								b. MANAGEMENT OF RESOURCES/ PERSONNEL							
c. IMPLEMENTATION OF THE CQC PLAN								c. COORDINATION AND CONTROL OF SUBCONTRACTOR(S)							
d. QUALITY OF QC DOCUMENTATION								d. ADEQUACY OF SITE CLEAN-UP							
e. STORAGE OF MATERIALS								e. EFFECTIVENESS OF JOB-SITE SUPERVISION							
f. ADEQUACY OF MATERIALS								f. COMPLIANCE WITH LAWS AND REGULATIONS							
g. ADEQUACY OF SUBMITTALS								g. PROFESSIONAL CONDUCT							
h. ADEQUACY OF QC TESTING								h. REVIEW/RESOLUTION OF SUBCONTRACTOR'S ISSUES							
i. ADEQUACY OF AS-BUILTS								i. IMPLEMENTATION OF SUBCONTRACTING PLAN							
j. USE OF SPECIFIED MATERIALS															
k. IDENTIFICATION/CORRECTION OF DEFICIENT WORK IN A TIMELY MANNER															
17. TIMELY PERFORMANCE								18. COMPLIANCE WITH LABOR STANDARDS							
a. ADEQUACY OF INITIAL PROGRESS SCHEDULE								a. CORRECTION OF NOTED							
b. ADHERENCE TO APPROVED SCHEDULE								b. PAYROLLS PROPERLY COMPLETED AND SUBMITTED							
c. RESOLUTION OF DELAYS								c. COMPLIANCE WITH LABOR LAWS AND REGULATIONS WITH SPECIFIC ATTENTION TO THE DAVIS-BACON ACT AND EEO REQUIREMENTS							
d. SUBMISSION OF REQUIRED DOCUMENTATION															
e. COMPLETION OF PUNCHLIST ITEMS								19. COMPLIANCE WITH SAFETY STANDARDS							
f. SUBMISSION OF UPDATED AND REVISED PROGRESS SCHEDULES								a. ADEQUACY OF SAFETY PLAN							
g. WARRANTY RESPONSE								b. IMPLEMENTATION OF SAFETY PLAN							
								c. CORRECTION OF NOTED							

20. REMARKS (Explanation of unsatisfactory evaluation is required. Other comments are optional. Provide facts concerning specific events or actions to justify the evaluation. These data must be in sufficient detail to assist contracting officers in determining the contractor's responsibility. Continue on separate sheet(s), if needed.)

SAMPLE SMALL BUSINESS SUBCONTRACTING PLAN

NOTICE TO BIDDERS: If your firm is a large business and your bid exceeds \$500,000 or more for services or \$1,000,000 for construction, your attention is directed to the following provisions contained in the solicitation:

52.219-8, Utilization of Small Business Concerns (Oct 2000)
52.219-9, Small Business Subcontracting Plan (Jan 2002)
52.219-16, Liquidated Damages - Subcontracting Plan (Jan 1999)
52.226-1, Utilization of Indian Organizations and Indian-Owned Economic Enterprises (Jun 2000)

For your information, the United Army Corps of Engineers considers the following goals reasonable and achievable for fiscal year and during the performance of the resultant contract.

a. 57.2% of planned subcontracting dollars will be placed with all small business concerns.

b. 8.9% of planned subcontracting dollars will be placed with those small business concerns owned and controlled by socially and economically disadvantaged individuals.

c. 8.1% of planned subcontracting dollars will be placed with those small business concerns owned and controlled by women.

d. 3.0% of planned subcontracting dollars will be placed with those small business concerns owned and controlled by service disable veterans.

e. 3.0% of planned subcontracting dollars will be placed with those small business concerns owned and controlled by certified Hubzone concerns.

Goals included in any proposed subcontracting plan should be at least equal to those indicated above. If lesser goals are proposed, you must substantiate how the proposed plan represents the firm best effort to comply with the terms and conditions of the solicitation. Bidders are highly encouraged to become familiarize with the intent of the solicitation provisions and the elements of the subcontracting plan.

The subcontracting plan must contain, at a minimum, the elements set forth in solicitation provision 52.219-9. Proposed plans will be reviewed to ensure the plan represents the firm's best efforts to maximize subcontracting opportunities for small, small disadvantaged and women-owned businesses. Subcontracting plans require Contracting Officer approval prior to contract award. The apparent low bidder must submit an acceptable subcontracting plan within five (5) calendar days after bid opening (a longer period maybe granted by the Contracting Officer upon request) to the Contracting Activity.

Should the successful offeror fail to submit an acceptable subcontracting plan within the time limit prescribed by the Contracting Officer, offer bid will be considered ineligible for award. The approved subcontracting plan (to include goals) will become a material part of the contract. An example of a format of a subcontracting plan is attached for your information. The attached ***plan is an example only*** and

should not be construed as an acceptable subcontracting plan. Any format will be acceptable provided the plan addresses each element as required by the Federal Acquisition Regulations and its supplements.

Should you have any questions or need assistance in developing your plan, please contact the assigned Contract Specialist or the District's Deputy for Small Business at 402-221-4110 or fax your inquiries to 402-221-4199.

EXAMPLE
SMALL, SMALL DISADVANTAGED AND WOMEN-OWNED
SMALL BUSINESS SUBCONTRACTING PLAN

DATE: _____

CONTRACTOR: _____

ADDRESS: _____

PHONE NO: _____

PROJECT TITLE: _____

SOLICITATION NO: _____

1. In accordance with the contract clauses at 52.219-8 and 52.219-9, (name of contractor) submits the following Subcontracting Plan for Small, Small Disadvantaged, and Women-owned Business Concerns.

2. Corresponding dollar values for percentages cited in Para. 3:

- a. Total contract amount is \$_____.
- b. Total dollars planned to be subcontracted (to all types of businesses):
\$_____.
- c. Total dollars planned to be subcontracted to small business concerns:
\$_____.
- d. Total dollars planned to be subcontracted to small disadvantaged business concerns: \$_____.
- e. Total dollars planned to be subcontracted to small woman-owned business concerns: \$_____.
- f. Total dollars planned to be subcontracted to historical black colleges and minority institutions: \$_____.

3. The following percentage goals (expressed in terms of a percentage of total planned subcontracting dollars) are applicable to the contract awarded under the solicitation cited above.

- a. The total estimated percentage of all planned subcontracting to all types of business concerns under this contract is: _____%.
- b. Small Business Concerns: _____% of total planned subcontracting dollars under this contract will go to subcontractors who are small business concerns including 3c. and 3d.

c. Small Disadvantaged Business Concerns: _____% of total planned subcontracting dollars under this contract will go to subcontractors who are small disadvantaged individuals. **NOTE:** Women-owned businesses are not considered a small disadvantaged business. Do not include subcontract awards to women-owned businesses in your calculations for paragraph 3c unless the firm meets the definition of a small disadvantaged business.

d. Woman-Owned Small Business Concerns: _____% of total planned subcontracting dollars under this contract will go to subcontractors who are woman-owned small businesses.

e. HubZone Concerns: _____% of total planned subcontracting dollars under this contract will go to subcontractors who are hubzones.

f. Service Disable Veterans: _____% of total planned subcontracting dollars under this contract will go to subcontractors who are service disable veterans.

g. Veterans: _____% of total planned subcontracting dollars under this contract will go to subcontractors who are veterans.

h. Historical Black Colleges and Minority Institutions: _____% of total planned subcontracting dollars under this contract will go to subcontractors who historical black colleges and/or minority institutions.

4. The principal items or areas we will subcontract under this contract are (NOTE: **Construction contractors remember to include materials/supplies** when developing plan. Also, list each subcontracted task by Division and Section number):

a. Of the items or areas stated in 4; the following are planned to be subcontracted to Small Businesses:

b. Of the items or areas stated in 4.a; the following are planned to be subcontracted to Small Disadvantaged Businesses:

c. Of the items or areas stated in 4.a; the following are planned to be subcontracted to Small Women-Owned Businesses:

****NOTE: SEE LAST PAGE IF THIS SOLICITATION HAS OPTIONS (DELETE THIS STATEMENT FROM YOUR PLAN)****

5. Provide a description of the method your firm used to develop the subcontracting goals in paragraph 2:

6. Indirect costs were () were not () used in establishing subcontracting goals. **If indirect costs are included in your goals, furnish a description of the method used to determine the proportionate share of indirect costs to be incurred with (i) small business concerns (ii) small disadvantaged business concerns and (iii) women-owned.**

7. The following individual will administer this Subcontracting Plan on behalf of (name of contractor):

Name:

Title:

Address:

Telephone:

The aforementioned individual's specific duties will include, but is not limited to:

a. Developing and maintaining source lists of small, small disadvantaged and women-owned small business concerns. Sources used are the Small Business Administration's Procurement Automated Source System (PASS), the National Minority Purchasing Council Vendor Information Service, Minority Business Development Agency, US Department of Commerce, Local Minority Business Development Centers, Economic Development Centers, and National Center for American Indian Enterprise Development.

b. Assuring the inclusion of small, small disadvantaged, and women-owned small business concerns in all solicitations for products or services which they are capable of providing; and ensuring that all solicitations are structured to permit the maximum possible participation by small, small disadvantaged and women-owned small business concerns.

c. Establishing and maintaining records of all subcontract awards to ensure appropriate documentation of non-selection of bids submitted by a small, small disadvantaged business, or women-owned small business concerns.

d. Preparing and submitting the Subcontracting Report for Individual Contracts (SF 294) and the Summary Subcontract Report (SF 295) in accordance with instructions provided, and coordinating and preparing for all compliance reviews by Federal agencies.

e. Promoting activities necessary to further the intent of the subcontracting plan. Activities include motivational training of purchasing personnel; attendance at workshops, seminars and trade fairs conducted by or on behalf of small business and/or small disadvantaged and/or women-owned small business concerns; and general cooperation with members of the small, small disadvantaged and women-owned small business concerns or their representatives.

8. The following steps will be taken to ensure that small, small disadvantaged, and women-owned small business concerns receive notice of and have an equitable opportunity to compete for intended awards of subcontracts and/or purchase orders for the products and/or services describe in paragraph 4 above:

a. Sources will be requested through SBA's PASS system, business development organizations, minority and small business trade associations and at small, minority and women-owned small business procurement conferences; sources will be contacted; and bidding materials will be provided to all responding parties expressing an interest.

b. The firm will conduct and maintain internal motivational training to guide and encourage purchasing personnel to maintain source lists and guides to small, small disadvantaged, and women-owned small business concerns. Purchasing activities will be monitored to ensure sufficient time is allowed for interested bidders to prepare bids and to ensure continuous compliance with the approved Subcontracting Plan.

9. [Name of contractor] agrees that the clause entitled "Utilization of Small, Small Disadvantaged and Women-Owned Business Concerns" will be included in all subcontracts that offer further subcontracting opportunities. All subcontractors, except small business concerns, who receive subcontracts in excess of \$500,000 (\$1,000,000 in the case of construction) will be required to adopt a plan similar to this one. Such plans will be reviewed to assure that all minimum requirements of an acceptable subcontracting plan have been satisfied. The acceptability of proposed goals shall be determined on a cases-by-case basis depending on the supplies/services involved, the availability of potential small, small disadvantaged, and women-owned subcontractors, and prior experience. Once approved and implemented, plans will be monitored through the submission of periodic reports or, as time and availability of funds permit, periodic visits to subcontractors facilities to review applicable records and subcontracting program progress.

10. The Firm agrees to submit periodic reports and cooperate in any studies or surveys required by the Contracting Activity or Small Business Administration to determine the extent of the firm compliance with the subcontracting plan.

11. (Name of Contractor) agrees to maintain at least the following types of records to document compliance with the Subcontracting Plan:

a. The names of all organizations, agencies, and associations contacted for small, small disadvantaged, and women-owned small business sources, along with records of attendance at conference, seminars and trade fairs where additional sources were developed.

b. Source lists, guides, and other data identifying small business concerns, small disadvantaged business concerns and women-owned small business concerns.

c. Records of subcontracts award in excess of \$100,000 will demonstrate how small business concerns, small disadvantaged business concerns and women-owned business concerns were solicited or provide an explanation as to why these business concerns were not considered for subcontracting opportunities.

d. . Records of subcontract award data to include subcontractor's name and address, to be kept on a contract-by-contract basis.

e. Minutes of internal motivational and training meetings held for the guidance and encouragement of purchasing personnel, and records of all monitoring activities performed for compliance evaluation.

f. Copies of SF 294 and SF 295 showing date and place of filing and copies of all other reports or results of reviews conducted by the contracting agency or other interested agencies of the Federal government to monitor our compliance with this Subcontracting Plan.

12. (Name of Contractor) will submit a SF 295, Summary Subcontract Report, on Corps of Engineers projects only. The SF 295 shall be completed and distributed in accordance with the Corps of engineers Supplemental Instructions. (Name of Contractor) will not report Corps of Engineers projects through any other Agency unless authorized by the Contracting Officer.

BY: _____

Signature and Title of CEO
Company Name

Date: _____

NOTE: If this solicitation has options, the plan must contain separate goals for each option. EXAMPLE:

	<u>Dollars</u>	<u>Percentage</u>
1. Option # _____ total:	\$ _____	_____
2. Total to be subcontracted to all businesses:	\$ _____	_____
a. Subcontracted to Small Business:	\$ _____	_____
b. Subcontracted to Small Disadvantaged Businesses:	\$ _____	_____
c. Subcontracted to Women-Owned Small Businesses:	\$ _____	_____
d.. Subcontracted to Historical Black Colleges and Minority Institutions:	\$ _____	_____

APPENDIX CC SUBCONTRACTING PLAN CHECKLIST

1. Policy statement or evidence of internal guidance to company buyers recognizing commitment to Pub. L. 99-661, Section 1207, and Pub. L. 100-180, Section 806.

0 No written policy statement in plan.

1-2 Plan includes a general policy, but no evidence of recognition of special emphasis being placed on subcontracting with SDBs, HBCUs and MIs as a result of Pub.L.s.

3-5 Definitive corporate and management commitment evidenced in individual plan and master plan by specifically referencing the Pub.L.s.

POINT RANGE POINTS ASSIGNED

0-5

2. Efforts to broaden SB and SDB active vendor base. (FAR 19.704(a), 52.219-9(d), DFARS Subpart 219.5, 219.704(a)(1), 219.705 and 252.219-7003)

0 Description of efforts merely parrots requirements of FAR to maintain listing of vendors.

1-2 Contains evidence that effort is directed at increasing subcontracts to SBs and SDBs for non-complex and general housekeeping supplies or services normally awarded to firms already in existing vendor base.

3-10 Addresses efforts to increase the number of SB and SDB sources awarded subcontracts, establishes plans to use competition restricted to SDBs and gives details about how plans to use competition restricted to SDBs will be accomplished. (DFARS 219.705-4 and Subpart 219.5)

NOTE: After scoring the plan to this point, if zero points have been assigned for Element 2, proceed to Item 3, Outreach. If one or more points have been assigned for this Element 2, proceed to evaluation of the sub elements labeled "minus 2" and "minus 3" to determine if points assigned so far must be reduced. Do not reduce points already assigned to less than zero. (No negative points are to be entered under "Points Assigned" for any Element.) These negative scores are additive; if both of the sub elements apply, then minus five points are assessed to reduce points already assigned under this element 2.

Minus 2 Includes efforts described above which rate 1-2 or 3-10 points but, when it would be appropriate, does not address effort to involve HBCUs and MIs in performing the contract for which the subcontracting plan is submitted. (DFARS 219.704(a)(1) and 219.705-4(d))

Minus 3 Includes efforts described above which rate 1-2 or 3-10 points but does not address effort to identify and overcome obstacles, which may prohibit award to HBCU and MI sources currently in vendor base.

POINT RANGE POINTS ASSIGNED

0-10

3. Outreach (ongoing and planned actions) (FAR 19.704(a), 19.705-4, 52.219-9(d) and 52.219-9(e), DFARS 219.705).

0 No mention of outreach.

1-4 Describes efforts to work with organizations in FAR 52.219-9(d)(11)(iv) to identify potential sources for items not traditionally awarded to SB or SDB firms. (FAR 52.219-9(d)(11)(iv) and 52.219-9(e))

5-10 Indicates intent to conduct reviews to determine the competence, ability, experience and capacity available in SB or SDB firms and to provide technical assistance to SBs and SDBs or explains why such reviews or technical assistance are not appropriate. (FAR 19.705-4(c) and 52.219-9(e))

NOTE: After scoring the plan to this point, if zero points have been assigned for Element 3, proceed to Item 4, Description of supplies and services. If one or more points have been assigned for this Element 3, proceed to evaluation of the sub element labeled "minus 3" to determine if points assigned so far must be reduced. Do not reduce points already assigned to less than zero. (No negative points are to be entered under "Points Assigned" for any Element.)

Minus 3 Fails to indicate the extent to which HBCU and MI participation will be considered and facilitated in performing the contract for which the subcontracting plan is submitted, or fails to indicate other efforts to increase HBCU and MI participation in future DoD acquisitions. (DFARS 219.705-4(d))

POINT RANGE POINTS ASSIGNED
0-10

4. Describes supplies and services to be subcontracted and planned for subcontracting to SBs, SDBs, HBCUs and MIs. (FAR 19.705-4(d), 52.219-9(d)(3), 52.219-9(e) and DFARS 219.705).

0 No mention.

1-4 Generic list of routine supplies and services included in materials listing for the specific contract.

5-7 Indicates intent to review major product/system components and key project elements of R&D, construction, service and spare parts contracts for subcontracting to SBs, SDBs, HBCUs and MIs. (FAR 19.705-4(d)(3) and (4), 52.219-9(e)(1) and (2) and DFARS 219.705)

8-10 Substantive plan actually targets specific SBs, SDBs, HCBUs and MIs for review to determine their competence, ability, experience and capacity and identifies specific components or major portions of the acquisition for consideration of SB, SDB, HBCU or MI competition. Also, indicates intent to work with large business subcontractors for major subsystems or key project elements to ensure "flow down" of this philosophy. (FAR 19.705-4(d) and DFARS 219.705)

POINT RANGE POINTS ASSIGNED
0-10

5. Describes specific efforts, based on results of efforts described in Elements No. 3 and No. 4 to ensure that SB, SDB, HBCU and MI concerns have equitable opportunity to participate in acquisitions. (FAR 19.704(a), 19.705-4, 52.219-9(d) and DFARS 219.705).

0 No mention.

1-4 Description of efforts merely parrots FAR 19.704(a)(3) and (6) and 52.219-9(d)(8).

5-8 Describes how the company intends to evaluate its own SB and SDB award performance and program effectiveness against the established goals, both company-wide and for the individual plan being negotiated. (FAR 19.704(a)(1) and (6) and 52.219-9(d)(11)(v))

9-12 Includes SBs, SDBs, HBCUs and MIs by name as members of original team for producing specific major components or subassemblies, providing a major service or performing a significant portion of the effort. (DFARS 219.705-2(d))

13-15 Describes special efforts to establish long-range relationships with SBs, SDBs, HBCUs and MIs, including leader-follower techniques, when appropriate. (FAR 19.705-4(d)(4) and DFARS 219.705-2(d))

POINT RANGE POINTS ASSIGNED
0-15

6. Development of percentage goal is based on planned subcontracting, which is challenging, yet realistic. (FAR 19.705-4(d), DFARS 219.704(a)(1) and 219.705-4).

0 Fails to include a specific goal for subcontracting with SBs, SDBs, HBCUs and MIs or proposes zero percent goal without substantive justification.

1-5 Sets small business goal of less than 10 percent and/or SDB/HBCU/MI goal of two percent or less with no significant justification.

6-10 Sets goals of less than 10 percent (SB) and 2 percent (SDB), but contractor shows evidence of reasonable effort, including use of set-asides, to involve SBs, SDBs, HBCUs or MIs in non-traditional areas.

11-20 Sets goals of over 10 percent (SB) and 2 percent (SDB) and also identifies specific SB, SDB, HBCU or MI concerns planned to be subcontractors, including the item or service or effort to be subcontracted. Indicates extent to which firms have participated in proposal preparation or otherwise indicates extent to which subcontracting to these firms may reasonably be assured. Goals are realistic in view of actions stated in other portions of the plan and make-or-buy plan, if applicable.

21-30 Same as for 11-20 points, but proposed percent of goal is reasonable in comparison with prior experience, yet indicates reasonable effort to improve on past experience in terms of dollars, number of SDBs, HBCUs, and MIs involved, and movement into area without previous SDB, HBCU or MI involvement.

0-40

Extent to which the company has historically been successful in establishing realistic, yet challenging, goals and achieving them. Consider DCMC comments on prime contractor's justifications for prior failure to achieve goals. To avoid penalizing the contractor when there has been no previous defense contract, assign 10 points. (FAR 19.705-4(d)(1) and (d)(2)(iii), 19.706 and DFARS 219.706).

0-10

Does the plan have--

G. A description of efforts to ensure that SBs and SDBs have an equitable opportunity to participate in the acquisition? (FAR 52.219-9(d)(8))

YES ()

NO ()

H. A recitation of the types of records maintained to demonstrate procedures adopted to comply with the requirements and goal in the plan? (FAR 52.219-9(d)(11))

YES ()

NO ()

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SECTION 00600
REPRESENTATIONS, CERTIFICATIONS & OTHER STATEMENTS OF OFFERORS

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SECTION 00600
REPRESENTATIONS, CERTIFICATIONS & OTHER STATEMENTS OF OFFERORS

The bidder (offeror) makes the following certification and representations as a part of the proposal, shall check the appropriate boxes, fill in the appropriate information, and provide signatures on the attached "Solicitation Form" (00600) pages, and submit with Standard Form 1442 (Section 00010).

1. (FAR 52.203-2) CERTIFICATE OF INDEPENDENT PRICE DETERMINATION (APR 1985).

(a) The offeror certifies that -

(1) The prices in this offer have been arrived at independently, without, for the purpose of restricting competition, any consultation, communication, or agreement with any other offeror or competitor relating to (i) those prices, (ii) the intention to submit an offer, or (iii) the methods or factors used to calculate the prices offered;

(2) the prices in this offer have not been and will not be knowingly disclosed by the offeror, directly or indirectly, to any other offeror or competitor before bid opening (in the case of a Sealed Bid solicitation) or contract award (in the case of a negotiated solicitation) unless otherwise required by law; and

(3) no attempt has been made or will be made by the offeror to induce any other concern to submit or not to submit an offer for the purpose of restricting competition.

(b) Each signature on the offer is considered to be a certification by the signatory that the signatory -

(1) is the person in the offeror's organization responsible for determining the prices being offered in this bid or proposal, and that the signatory has not participated and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) above; or

(2)(i) has been authorized, in writing, to act as agent for the following principals in certifying that those principals have not participated, and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) above _____

_____ [insert full name of person(s) in the offeror's organization responsible for determining the prices offered in this bid or proposal, and the title of his or her position in the offeror's organization];

(ii) as an authorized agent, does certify that the principals named in subdivision (b)(2)(i) above have not participated, and will not participate, in any action contrary to subparagraphs (a)(1) through (a)(3) above; and

(iii) as an agent, has not personally participated, and will not participate, in any action contrary to subparagraphs (a)(1) through (a)(3) above.

(c) If the offeror deletes or modifies subparagraph (a)(2) above, the offeror must furnish with its offer a signed statement setting forth in detail the circumstances of the disclosure.

2. (FAR 52.203-11) CERTIFICATION AND DISCLOSURE REGARDING PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS (APR 1991).

(a) The definitions and prohibitions contained in the clause, at FAR 52.203-12, Limitation on Payments to Influence Certain Federal Transactions, included in this solicitation, are hereby incorporated by reference in paragraph (b) of this certification.

(b) The offeror, by signing its offer, hereby certifies to the best of his or her knowledge and belief that on or after December 23, 1989, -

(1) No Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress on his or her behalf in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment or modification of any Federal contract, grant, loan, or cooperative agreement;

(2) If any funds other than Federal appropriated funds (including profit or fee received under a covered Federal transaction) have been paid, or will be paid, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress on his or her behalf in connection with this solicitation, the offeror shall complete and submit, with its offer, OMB standard form LLL, Disclosure of Lobbying Activities, to the Contracting Officer; and

(3) He or she will include the language of this certification in all subcontract awards at any tier and require that all recipients of subcontract awards in excess of \$100,000 shall certify and disclose accordingly.

(c) Submission of this certification and disclosure is a prerequisite for making or entering into this contract imposed by section 1352, title 31, United States Code. Any person who makes an expenditure prohibited under this provision or who fails to file or amend the disclosure form to be filed or amended by this provision, shall be subject to a civil penalty of not less than \$10,000, and not more than \$100,000, for each such failure.

3. (FAR 52.204-3) TAXPAYER IDENTIFICATION (OCT 1998).

(a) Definitions.

"Common parent," as used in this provision, means that corporate entity that owns or controls an affiliated group of corporations that files its Federal income tax returns on a consolidated basis, and of which the offeror is a member.

"Taxpayer Identification Number (TIN)," as used in this provision, means the number required by the Internal Revenue Service (IRS) to be used by the offeror in reporting income tax and other returns. The TIN may be either a Social Security Number or an Employer Identification Number.

(b) All offerors must submit the information required in paragraphs (d) through (f) of this provision to comply with debt collection requirements of 31 U.S.C. 7701(c) and 3325(d), reporting requirements of 26 U.S.C. 6041, 6041A, and 6050M, and implementing regulations issued by the IRS. If the resulting contract is subject to the payment reporting requirements described in Federal Acquisition Regulation (FAR) 4.904, the failure or refusal by the offeror to furnish the information may result in a 31 percent reduction of payments otherwise due under the contract.

(c) The TIN may be used by the Government to collect and report on any delinquent amounts arising out of the offeror's relationship with the Government (31 U.S.C. 7701(c)(3)). If the resulting contract is subject to the payment reporting requirements described in FAR 4.904, the TIN provided hereunder may be matched with IRS records to verify the accuracy of the offeror's TIN.

(d) Taxpayer Identification Number (TIN).

[] TIN: _____.

☐ TIN has been applied for.

☐ TIN is not required because:

☐ Offeror is a nonresident alien, foreign corporation, or foreign partnership that does not have income effectively connected with the conduct of a trade or business in the United States and does not have an office or place of business or a fiscal paying agent in the United States;

☐ Offeror is an agency or instrumentality of a foreign government;

☐ Offeror is an agency or instrumentality of the Federal Government.

(e) Type of organization.

☐ Sole proprietorship;

☐ Partnership;

☐ Corporate entity (not tax-exempt);

☐ Corporate entity (tax-exempt);

☐ Government entity (Federal, State, or local);

☐ Foreign government;

☐ International organization per 26 CFR 1.6049-4;

☐ Other _____.

(f) Common parent.

☐ Offeror is not owned or controlled by a common parent as defined in paragraph (a) of this provision.

☐ Name and TIN of common parent:

Name _____

TIN _____

(End of provision)

4. (FAR 52.204-5) WOMEN-OWNED BUSINESS (OTHER THAN SMALL BUSINESS)[MAY 1999]

(a) *Definition.* Women-owned business concern, as used in this provision, means a concern that is at least 51 percent owned by one or more women; or in the case of any publicly owned business, at least 51 percent of its stock is owned by one or more women; and whose management and daily business operations are controlled by one or more women.

(b) *Representation.* [Complete only if the offeror is a women-owned business concern and has not represented itself as a small business concern in paragraph (b)(1) of FAR 52.219-1, Small Business Program Representations, of this solicitation.] The offeror represents that it ☐ is a women-owned business concern.

(End of provision)

5. (DFARS 252.204-7001) COMMERCIAL AND GOVERNMENT ENTITY (CAGE) CODE REPORTING (AUG 1999).

(a) The offeror is requested to enter its CAGE code on its offer in the block with its name and address. The CAGE code entered must be for that name and address. Enter "CAGE" before the number.

(b) If the Offeror does not have a CAGE code, it may ask the Contracting Officer to request one from the Defense Logistics Information Service (DLIS). The Contracting Officer will-

- (1) Ask the Contractor to complete section B of a DD Form 2051, Request for Assignment of a Commercial and Government Entity (CAGE) Code;
- (2) Complete section A and forward the form to DLIS; and
- (3) Notify the Contractor of its assigned CAGE code.

(c) Do not delay submission of the offer pending receipt of a CAGE code.

6. (FAR 52.209-5) CERTIFICATION REGARDING DEBARMENT, SUSPENSION, PROPOSED DEBARMENT, AND OTHER RESPONSIBILITY MATTERS (DEC 2001).

(a)(1) The Offeror certifies, to the best of its knowledge and belief, that—

(i) The Offeror and/or any of its Principals—

(A) Are ☐ are not ☐ presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency;

(B) Have ☐ have not ☐, within a three-year period preceding this offer, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, state, or local) contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, or receiving stolen property; and

(C) Are ☐ are not ☐ presently indicted for, or otherwise criminally or civilly charged by a governmental entity with, commission of any of the offenses enumerated in paragraph (a)(1)(i)(B) of this provision.

(ii) The Offeror has ☐ has not ☐, within a three-year period preceding this offer, had one or more contracts terminated for default by any Federal agency.

(2) "Principals," for the purposes of this certification, means officers; directors; owners; partners; and, persons having primary management or supervisory responsibilities within a business entity (*e.g.*, general manager; plant manager; head of a subsidiary, division, or business segment, and similar positions).

This Certification Concerns a Matter Within the Jurisdiction of an Agency of the United States and the Making of a False, Fictitious, or Fraudulent Certification May Render the Maker Subject to Prosecution Under Section 1001, Title 18, United States Code.

(b) The Offeror shall provide immediate written notice to the Contracting Officer if, at any time prior to contract award, the Offeror learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

(c) A certification that any of the items in paragraph (a) of this provision exists will not necessarily result in withholding of an award under this solicitation. However, the certification will be considered in connection with a determination of the Offeror's responsibility. Failure of the Offeror to furnish a certification or provide such additional information as requested by the Contracting Officer may render the Offeror nonresponsible.

(d) Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by paragraph (a) of this provision. The knowledge and

information of an Offeror is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

(e) The certification in paragraph (a) of this provision is a material representation of fact upon which reliance was placed when making award. If it is later determined that the Offeror knowingly rendered an erroneous certification, in addition to other remedies available to the Government, the Contracting Officer may terminate the contract resulting from this solicitation for default. (End of Provision)

7. (DFARS 252.209-7001) DISCLOSURE OF OWNERSHIP OR CONTROL BY A FOREIGN GOVERNMENT THAT SUPPORTS TERRORISM (MAR 1998). [For Contracts exceeding \$100,000]

(a) Definitions.

As used in this provision-

(1) "Government of a terrorist country" includes the state and the government of a terrorist country, as well as any political subdivision, agency, or instrumentality thereof.

(2) "Terrorist country" means a country determined by the Secretary of State, under section 6(j)(1)(A)) of the Export Administration Act of 1979 (50 U.S.C. App. 2405(j)(i)(A)), to be a country the government of which has repeatedly provided support for acts of international terrorism. As of the date of this provision, terrorist countries include: Cuba, Iran, Iraq, Libya, North Korea, Sudan, and Syria.

(3) "Significant interest" means-

(i) Ownership of or beneficial interest in 5 percent or more of the firm's or subsidiary's securities. Beneficial interest includes holding 5 percent or more of any class of the firm's securities in "nominee shares," "street names," or some other method of holding securities that does not disclose the beneficial owner;

(ii) Holding a management position in the firm, such as a director or officer;

(iii) Ability to control or influence the election, appointment, or tenure of directors or officers in the firm;

(iv) Ownership of 10 percent or more of the assets of a firm such as equipment, buildings, real estate, or other tangible assets of the firm; or

(v) Holding 50 percent or more of the indebtedness of a firm.

(b) Prohibition on award. In accordance with 10 U.S.C. 2327, no contract may be awarded to a firm or a subsidiary of a firm if the government of a terrorist country has a significant interest in the firm or subsidiary [or, in the case of a subsidiary, the firm that owns the subsidiary], unless a waiver is granted by the Secretary of Defense.

(c) Disclosure.

The Offeror shall disclose any significant interest the government of each of the following countries has in the Offeror or a subsidiary of the Offeror. If the Offeror is a subsidiary, it shall also disclose any significant interest the government of a terrorist country has in any firm that owns or controls the subsidiary. The disclosure shall include--

(1) Identification of each government holding a significant interest; and

(2) A description of the significant interest held by each Government.

(End of provision)

8. RESERVED

9. (FAR 52.219-1) SMALL BUSINESS PROGRAM REPRESENTATIONS (APR 2002) ALTERNATE I (APR 2002)

(a)(1) The North American Industry Classification System (NAICS) code for this acquisition is _____ *[insert NAICS code]*.

(2) The small business size standard is _____ *[insert size standard]*.

(3) The small business size standard for a concern which submits an offer in its own name, other than on a construction or service contract, but which proposes to furnish a product which it did not itself manufacture, is 500 employees.

(b) *Representations.* (1) The offeror represents as part of its offer that it ☐ is, ☐ is not a small business concern.

(2) *[Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.]* The offeror represents, for general statistical purposes, that it ☐ is, ☐ is not, a small disadvantaged business concern as defined in 13 CFR 124.1002.

(3) *[Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.]* The offeror represents as part of its offer that it ☐ is, ☐ is not a women-owned small business concern.

(4) *[Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.]* The offeror represents as part of its offer that it ☐ is, ☐ is not a veteran-owned small business concern.

(5) *[Complete only if the offeror represented itself as a veteran-owned small business concern in paragraph (b)(4) of this provision.]* The offeror represents as part of its offer that it ☐ is, ☐ is not a service-disabled veteran-owned small business concern.

(6) *[Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.]* The offeror represents, as part of its offer, that—

(i) It ☐ is, ☐ is not a HUBZone small business concern listed, on the date of this representation, on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration, and no material change in ownership and control, principal office, or HUBZone employee percentage has occurred since it was certified by the Small Business Administration in accordance with 13 CFR part 126; and

(ii) It ☐ is, ☐ is not a joint venture that complies with the requirements of 13 CFR part 126, and the representation in paragraph (b)(6)(i) of this provision is accurate for the HUBZone small business concern or concerns that are participating in the joint venture. *[The offeror shall enter the name or names of the HUBZone small business concern or concerns that are participating in the joint venture:_____.]* Each HUBZone small business concern participating in the joint venture shall submit a separate signed copy of the HUBZone representation.

(7) *[Complete if offeror represented itself as disadvantaged in paragraph (b)(2) of this provision.]* The offeror shall check the category in which its ownership falls:

_____ Black American.

_____ Hispanic American.

_____ Native American (American Indians, Eskimos, Aleuts, or Native Hawaiians).

_____ Asian-Pacific American (persons with origins from Burma, Thailand, Malaysia, Indonesia, Singapore, Brunei, Japan, China, Taiwan, Laos, Cambodia (Kampuchea), Vietnam, Korea, The Philippines, U.S. Trust Territory of the Pacific Islands (Republic of Palau), Republic of the Marshall Islands, Federated States of Micronesia, the Commonwealth of the Northern Mariana Islands, Guam, Samoa, Macao, Hong Kong, Fiji, Tonga, Kiribati, Tuvalu, or Nauru).

_____ Subcontinent Asian (Asian-Indian) American (persons with origins from India, Pakistan, Bangladesh, Sri Lanka, Bhutan, the Maldives Islands, or Nepal).

_____ Individual/concern, other than one of the preceding.

(c) *Definitions.* As used in this provision—

“Service-disabled veteran-owned small business concern”—

(1) Means a small business concern—

(i) Not less than 51 percent of which is owned by one or more service-disabled veterans or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more service-disabled veterans; and

(ii) The management and daily business operations of which are controlled by one or

more service-disabled veterans or, in the case of a veteran with permanent and severe disability, the spouse or permanent caregiver of such veteran.

(2) Service-disabled veteran means a veteran, as defined in 38 U.S.C. 101(2), with a disability that is service connected, as defined in 38 U.S.C. 101(16).

“Small business concern” means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the criteria in 13 CFR part 121 and the size standard in paragraph (a) of this provision.

“Veteran-owned small business concern” means a small business concern—

(1) Not less than 51 percent of which is owned by one or more veterans (as defined at 38 U.S.C. 101(2)) or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more veterans; and

(2) The management and daily business operations of which are controlled by one or more veterans.

“Women-owned small business concern” means a small business concern—

(1) That is at least 51 percent owned by one or more women; or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; and

(2) Whose management and daily business operations are controlled by one or more women.

(d) *Notice.* (1) If this solicitation is for supplies and has been set aside, in whole or in part, for small business concerns, then the clause in this solicitation providing notice of the set-aside contains restrictions on the source of the end items to be furnished.

(2) Under 15 U.S.C. 645(d), any person who misrepresents a firm's status as a small, HUBZone small, small disadvantaged, or women-owned small business concern in order to obtain a contract to be awarded under the preference programs established pursuant to section 8(a), 8(d), 9, or 15 of the Small Business Act or any other provision of Federal law that specifically references section 8(d) for a definition of program eligibility, shall—

(i) Be punished by imposition of fine, imprisonment, or both;

(ii) Be subject to administrative remedies, including suspension and debarment; and

(iii) Be ineligible for participation in programs conducted under the authority of the Act.

(End of provision)

10. RESERVED

11. (FARS 52.219-19) SMALL BUSINESS CONCERN REPRESENTATION FOR THE SMALL BUSINESS COMPETITIVENESS DEMONSTRATION PROGRAM (OCT 2000).

(a) *Definition.* “Emerging small business” as used in this solicitation, means a small business concern whose size is no greater than 50 percent of the numerical size standard applicable to the North American Industry Classification System (NAICS) code assigned to a contracting opportunity.

(b) (Complete only if Offeror has represented itself under the provision at FAR 52.219-1 as a small business concern under the size standards of this solicitation.) The Offeror [] is, [] is not an emerging small business.

(c) (Complete only if the Offeror is a small business or an emerging small business, indicating its size range.)

Offeror's number of employees for the past 12 months (check this column if size standard stated in solicitation is expressed in terms of number of employees) or Offeror's average annual gross revenue for the last 3 fiscal years (check this column if size standard stated in solicitation is expressed in terms of annual receipts). (Check one of the following.)

No. of Employees	Average Annual Gross Revenues
____ 50 or fewer	____ \$1 million or less
____ 51 - 100	____ \$1,000,001 - \$2 million
____ 101 - 250	____ \$2,000,001 - \$3.5 million
____ 251 - 500	____ \$3,500,001 - \$5 million
____ 501 - 750	____ \$5,000,001 - \$10 million
____ 751 - 1,000	____ \$10,000,001 - \$17 million
____ Over 1,000	____ Over \$17 million

12. (FARS 52.219-21) SMALL BUSINESS SIZE REPRESENTATION FOR TARGETED INDUSTRY CATEGORIES UNDER THE SMALL BUSINESS COMPETITIVENESS DEMONSTRATION PROGRAM (MAY 1999).

[Complete only if the Offeror has represented itself under the provision at 52.219-1 as a small business concern under the size standards of this solicitation.]

Offeror's number of employees for the past 12 months [*check this column if size standard stated in solicitation is expressed in terms of number of employees*] or Offeror's average annual gross revenue for the last 3 fiscal years [*check this column if size standard in solicitation is expressed in terms of annual receipts*]. [*Check one of the following.*]

NO. OF EMPLOYEES	AVERAGE ANNUAL GROSS REVENUES
____ 50 or fewer	____ \$1 million or less
____ 51 - 100	____ \$1,000,001 - \$2 million
____ 101 - 250	____ \$2,000,001 - \$3.5 million
____ 251 - 500	____ \$3,500,001 - \$5 million
____ 501 - 750	____ \$5,000,001 - \$10 million
____ 751 - 1,000	____ \$10,000,001 - \$17 million
____ Over 1,000	____ Over \$17 million

13. (FAR 52.222-21) CERTIFICATION OF NONSEGREGATED FACILITIES (FEB 1999).

(a) "Segregated facilities," as used in this clause, means any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for

employees, that are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, sex, or national origin because of written or oral policies or employee custom. The term does not include separate or single-user rest rooms or necessary dressing or sleeping areas provided to assure privacy between the sexes.

(b) The Contractor agrees that it does not and will not maintain or provide for its employees any segregated facilities at any of its establishments, and that it does not and will not permit its employees to perform their services at any location under its control where segregated facilities are maintained. The Contractor agrees that a breach of this clause is a violation of the Equal Opportunity clause in this contract.

(c) The Contractor shall include this clause in every subcontract and purchase order that is subject to the Equal Opportunity clause of this contract.
(End of clause)

14. (FAR 52.222-22) PREVIOUS CONTRACTS AND COMPLIANCE REPORTS (FEB 1999).

(a) It ☐ has, ☐ has not participated in a previous contract or subcontract subject the Equal Opportunity clause of this solicitation;

(b) It ☐ has, ☐ has not filed all required compliance reports; and

(c) Representations indicating submission of required compliance reports, signed by proposed subcontractors, will be obtained before subcontract awards.
(End of provision)

15. (FAR 52.223-4) RECOVERED MATERIAL CERTIFICATION (OCT 1997).

As required by the Resource Conservation and Recovery Act of 1976 (42 U.S.C. 6962(c)(3)(A)(i)), the offeror certifies, by signing this offer, that the percentage of recovered materials to be used in the performance of the contract will be at least the amount required by the applicable contract specifications.
(End of provision)

16. (FAR 52.223-13) CERTIFICATION OF TOXIC CHEMICAL RELEASE REPORTING (JUNE 2003) [For Contracts over \$100,000]

(a) Submission of this certification is a prerequisite for making or entering into this contract imposed by Executive Order 12969, August 8, 1995.

(b) By signing this offer, the offeror certifies that-

(1) As the owner or operator of a facilities that will be used in the performance of this contract that are subject to the filing and reporting requirements described in section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) (42 U.S.C. 11023) and section 6607 of the Pollution Prevention Act of 1990 (PPA) (42 U.S.C. 13106), the offeror will file and continue to file, for such facilities for the life of the contract the Toxic Chemical Release Inventory Form (Form R) as described in sections 313(a) and (g) of the EPCRA and section 6607 of PPA; or

(2) None of its owned or operated facilities to be used in the performance of this contract is subject the Form R filing and reporting requirements because each facility is exempt for at least one of the following reasons: (Check each block that is applicable.)

☐ (i) The facility does not manufacture, process or otherwise use any toxic chemicals listed under section 313(c) of EPCRA, 42 U.S.C. 11023(c);

☐ (ii) The facility does not have 10 or more full-time employees as specified in section 313(b)(1)(A) of EPCRA, 42 U.S.C. 11023(b)(1)(A);

☐ (iii) The facility does not meet the reporting thresholds of toxic chemicals established under section 313(f) of EPCRA, 42 U.S.C. 11023(f) (including the alternate thresholds at 40 CFR 372.27, provided an appropriate certification form has been filed with EPA);

☐ (iv) The facility does not fall within Standard Industrial Classification Code (SIC) major groups 20 through 39 or their corresponding North American Industry Classification System (NAICS) sectors 31 through 33; or

[] (v) The facility is not located within any State of the United States, the District of Columbia, or its outlying areas.

17. (DFARS 252.225-7031) SECONDARY ARAB BOYCOTT OF ISRAEL (APR 2003)

(a) *Definitions.* As used in this provision-

(1) "Foreign person" means any person (including any individual, partnership, corporation, or other form of association) other than a United States person.

(2) "United States person" is defined in 50 U.S.C. App. 2415(2) and means-

(i) Any United States resident or national (other than an individual resident outside the United States who is employed by other than a United States person);

(ii) Any domestic concern (including any permanent domestic establishment of any foreign concern); and

(iii) Any foreign subsidiary or affiliate (including any permanent foreign establishment) of any domestic concern that is controlled in fact by such domestic concern.

(b) *Certification.* If the offeror is a foreign person, the offeror certifies, by submission of an offer, that it-

(1) Does not comply with the Secondary Arab Boycott of Israel; and

(2) Is not taking or knowingly agreeing to take any action, with respect to the Secondary Boycott of Israel by Arab countries, which 50 U.S.C. App. 2407(a) prohibits a United States person from taking.

(End of Provision)

18. (DFAR 252.247-7022) REPRESENTATION OF EXTENT OF TRANSPORTATION BY SEA (AUG 1992).

(a) The Offeror shall indicate by checking the appropriate blank in paragraph (b) of this provision whether transportation of supplies by sea is anticipated under the resultant contract. The term "supplies" is defined in the Transportation of Supplies by Sea clause of this solicitation.

(b) REPRESENTATION. The Offeror represents that it-

_____ Does anticipate that supplies will be transported by sea in the performance of any contract or subcontract resulting from this solicitation.

_____ Does not anticipate that supplies will be transported by sea in the performance of any contract or subcontract resulting from this solicitation.

(c) Any contract resulting from this solicitation will include the Transportation of Supplies by Sea Clause. If the Offeror represents that it will not use ocean transportation, the resulting contract will also include the Defense FAR Supplement clause at 252.247-7024, Notification of Transportation of Supplies by Sea.

19. CONTRACTOR'S CERTIFICATION (Reference FAR 4.102) (Local Provision)

Offerors are cautioned to note the "Contractor's Certification" included in this solicitation and to furnish the information required by paragraph (b), Partnerships, and paragraph (c), Corporations, as appropriate.

(a) **CONTRACT WITH INDIVIDUAL.** If the resultant contract is with an individual, it shall be signed by the individual in his own name. A contract with an individual doing business as a firm shall be signed by that individual and will ordinarily take the following form.

_____ (Signed)

An individual doing business as

(b) CONTRACTS WITH PARTNERSHIPS. If the resultant contract is with a partnership, it need be signed by only one partner PROVIDED the partner signing has the authority to legally bind the partnership. In addition, the following statement shall be completed:

_____ is a partnership composed of
(Firm Name)

(List All Partners)

(Indicate if any partner is limited in partnership authority)

(c) CONTRACTS WITH CORPORATIONS. If the resultant contract is with a corporation, it shall be executed in the corporation name, followed by the word "by" after which the person who has been authorized to execute the contract on behalf of the corporation shall sign his/her name, with the designation of his/her official capacity. In addition, the following certification shall be completed:

I, _____, certify that I am the _____ of the corporation named as Contractor herein, that _____ who signed this contract on behalf of the Contractor was then _____ of said corporation, that said contract was duly for and on behalf of said corporation by authority of the governing body and is within the scope of its corporate powers.

In witness whereof, I have hereunto affixed my signature this ____ day of _____, 19____.

(Signature, Printed Name, Title)

(d) CONTRACT WITH JOINT VENTURES. If the resultant contract is with a joint venture, each participant shall sign and in the manner indicated above for each type of participant. In addition, to assure a single point of contact for resolution of contractual matters and payments, the following certification shall be signed by each participant in the joint venture.

The parties hereto expressly understand and agree as follows:

(1) _____
(Name) (Title) (Company)

is the principal representative of the joint venture. As such, all communications regarding the administration of the contract and the performance of the work thereunder may be directed to him. In the absence of:

(Name) (Title) (Company as above)

(Name) (Title) (Company of Alternate)

is the alternate principle of the joint venture.

(2) Directions, approvals, required notices, and all other communications from the Government to the joint venture, including transmittal of payments by the Government, shall be directed to:

(Name) (Title) (Company)

principal representative of the joint venture.

(e) SIGNATURE OF AGENTS. If the resultant contract is signed by an agent, other than as stated above, the fact of the agency will be evidenced by a copy of the Power of Attorney.

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SECTION 00700

CONTRACT CLAUSES

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SECTION 00700

CONTRACT CLAUSES

1. FAR 52.252-2 CLAUSES INCORPORATED BY REFERENCE (FEB 1998)

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this/these address(es):

<http://www.arnet.gov/far>

(End of clause)

*** - CONTRACT CLAUSES THAT MAY BE INCORPORATED BY REFERENCE**

2. DFARS 252.201-7000 CONTRACTING OFFICER'S REPRESENTATIVE (DEC 1991)

(a) Definition.

"Contracting officer's representative" means an individual designated in accordance with subsection 201.602-2 of the Defense Federal Acquisition Regulation Supplement and authorized in writing by the contracting officer to perform specific technical or administrative functions.

(b) If the Contracting Officer designates a contracting officer's representative (COR), the Contractor will receive a copy of the written designation. It will specify the extent of the COR's authority to act on behalf of the contracting officer. The COR is not authorized to make any commitments or changes that will affect price, quality, quantity, delivery, or any other term or condition of the contract.

(End of clause)

3. *FAR 52.202-1 DEFINITIONS (DEC 2001) ALTERNATE I (MAY 2001)

a) "Agency head" or "head of the agency" means the Secretary (Attorney General, Administrator, Governor, Chairperson, or other chief official, as appropriate) of the agency, unless otherwise indicated, including any deputy or assistant chief official of the executive agency.

(b) "Commercial component" means any component that is a commercial item.

(c) "Commercial item" means—

(1) Any item, other than real property, that is of a type customarily used by the general public or by non-governmental entities for purposes other than governmental purposes, and that—

(i) Has been sold, leased, or licensed to the general public; or

(ii) Has been offered for sale, lease, or license to the general public;

(2) Any item that evolved from an item described in paragraph (c)(1) of this clause through advances in technology or performance and that is not yet available in the commercial marketplace, but will be available in the commercial marketplace in time to satisfy the delivery requirements under a Government solicitation;

(3) Any item that would satisfy a criterion expressed in paragraphs (c)(1) or (c)(2) of this clause, but for—

(i) Modifications of a type customarily available in the commercial marketplace; or

(ii) Minor modifications of a type not customarily available in the commercial

marketplace made to meet Federal Government requirements. "Minor" modifications means modifications that do not significantly alter the nongovernmental function or essential physical characteristics of an item or component, or change the purpose of a process. Factors to be considered in determining whether a modification is minor include the value and size of the modification and the comparative value and size of the final product. Dollar values and percentages may be used as guideposts, but are not conclusive evidence that a modification is minor;

(4) Any combination of items meeting the requirements of paragraphs (c)(1), (2), (3), or (5) of this clause that are of a type customarily combined and sold in combination to the general public;

(5) Installation services, maintenance services, repair services, training services, and other services if—

(i) Such services are procured for support of an item referred to in paragraph (c)(1), (2), (3), or (4) of this definition, regardless of whether such services are provided by the same source or at the same time as the item; and

(ii) The source of such services provides similar services contemporaneously to the general public under terms and conditions similar to those offered to the Federal Government

(6) Services of a type offered and sold competitively in substantial quantities in the commercial marketplace based on established catalog or market prices for specific tasks performed under standard commercial terms and conditions. This does not include services that are sold based on hourly rates without an established catalog or market price for a specific service performed. For purposes of these services—

(i) "Catalog price" means a price included in a catalog, price list, schedule, or other form that is regularly maintained by the manufacturer or vendor, is either published or otherwise available for inspection by customers, and states prices at which sales are currently, or were last, made to a significant number of buyers constituting the general public; and

(ii) "Market prices" means current prices that are established in the course of ordinary trade between buyers and sellers free to bargain and that can be substantiated through competition or from sources independent of the offerors.

(7) Any item, combination of items, or service referred to in paragraphs (c)(1) through (c)(6), notwithstanding the fact that the item, combination of items, or service is transferred between or among separate divisions, subsidiaries, or affiliates of a Contractor; or

(8) A nondevelopmental item, if the procuring agency determines the item was developed exclusively at private expense and sold in substantial quantities, on a competitive basis, to multiple State and local Governments.

(d) "Component" means any item supplied to the Government as part of an end item or of another component, except that for use in 52.225-9, and 52.225-11 see the definitions in 52.225-9(a) and 52.225-11(a).

(e) "Contracting Officer" means a person with the authority to enter into, administer, and/or terminate contracts and make related determinations and findings. The term includes certain authorized representatives of the Contracting Officer acting within the limits of their authority as delegated by the Contracting Officer.

(f) "Nondevelopmental item" means—

(1) Any previously developed item of supply used exclusively for governmental purposes by a Federal agency, a State or local government, or a foreign government with which the United States has a mutual defense cooperation agreement;

(2) Any item described in paragraph (f)(1) of this definition that requires only minor modification or modifications of a type customarily available in the commercial marketplace in order to meet the requirements of the procuring department or agency; or

(3) Any item of supply being produced that does not meet the requirements of paragraph (f)(1) or (f)(2) solely because the item is not yet in use.

(End of clause)

4. *FAR 52.203-3 GRATUITIES (APR 1984)

(a) The right of the Contractor to proceed may be terminated by written notice if, after notice and hearing, the agency head or a designee determines that the Contractor, its agent, or another representative--

(1) Offered or gave a gratuity (e.g., an entertainment or gift) to an officer, official, or employee of the Government; and

- (2) Intended, by the gratuity, to obtain a contract or favorable treatment under a contract.
- (b) The facts supporting this determination may be reviewed by any court having lawful jurisdiction.
- (c) If this contract is terminated under paragraph (a) above, the Government is entitled--
 - (1) To pursue the same remedies as in a breach of the contract; and
 - (2) In addition to any other damages provided by law, to exemplary damages of not less than 3 nor more than 10 times the cost incurred by the Contractor in giving gratuities to the person concerned, as determined by the agency head or a designee. (This subparagraph (c)(2) is applicable only if this contract uses money appropriated to the Department of Defense.)
- (d) The rights and remedies of the Government provided in this clause shall not be exclusive and are in addition to any other rights and remedies provided by law or under this contract.

5. *FAR 52.203-5 COVENANT AGAINST CONTINGENT FEES (APR 1984)

(a) The Contractor warrants that no person or agency has been employed or retained to solicit or obtain this contract upon an agreement or understanding for a contingent fee, except a bona fide employee or agency. For breach or violation of this warranty, the Government shall have the right to annul this contract without liability or, in its discretion, to deduct from the contract price or consideration, or otherwise recover, the full amount of the contingent fee.

(b) "Bona fide agency," as used in this clause, means an established commercial or selling agency, maintained by a contractor for the purpose of securing business, that neither exerts nor proposes to exert improper influence to solicit or obtain Government contracts nor holds itself out as being able to obtain any Government contract or contracts through improper influence.

"Bona fide employee," as used in this clause, means a person, employed by a contractor and subject to the contractor's supervision and control as to time, place, and manner of performance, who neither exerts nor proposes to exert improper influence to solicit or obtain Government contracts nor holds out as being able to obtain any Government contract or contracts through improper influence.

"Contingent fee," as used in this clause, means any commission, percentage, brokerage, or other fee that is contingent upon the success that a person or concern has in securing a Government contract.

"Improper influence," as used in this clause, means any influence that induces or tends to induce a Government employee or officer to give consideration or to act regarding a Government contract on any basis other than the merits of the matter.

6. *FAR 52.203-7 ANTI-KICKBACK PROCEDURES (JUL 1995)

(a) Definitions.

"Kickback," as used in this clause, means any money, fee, commission, credit, gift, gratuity, thing of value, or compensation of any kind which is provided, directly or indirectly, to any prime Contractor, prime Contractor employee, subcontractor, or subcontractor employee for the purpose of improperly obtaining or rewarding favorable treatment in connection with a prime contract or in connection with a subcontract relating to a prime contract. "Person," as used in this clause, means a corporation, partnership, business association of any kind, trust, joint-stock company, or individual.

"Prime contract," as used in this clause, means a contract or contractual action entered into by the United States for the purpose of obtaining supplies, materials, equipment, or services of any kind.

"Prime Contractor," as used in this clause, means a person who has entered into a prime contract with the United States.

"Prime Contractor employee," as used in this clause, means any officer, partner, employee, or agent of a prime Contractor.

"Subcontract," as used in this clause, means a contract or contractual action entered into by a prime Contractor or subcontractor for the purpose of obtaining supplies, materials, equipment, or services of any kind under a prime contract.

"Subcontractor," as used in this clause, (1) means any person, other than the prime Contractor, who offers to furnish or furnishes any supplies, materials, equipment, or services of any kind under a prime contract or a subcontract entered into in connection with such prime contract, and (2) includes any person who offers to furnish or furnishes general supplies to the prime Contractor or a higher tier subcontractor.

"Subcontractor employee," as used in this clause, means any officer, partner, employee, or agent of a subcontractor.

(b) The Anti-Kickback Act of 1986 (41 U.S.C. 51-58) (the Act), prohibits any person from--
(1) Providing or attempting to provide or offering to provide any kickback;
(2) Soliciting, accepting, or attempting to accept any kickback; or
(3) Including, directly or indirectly, the amount of any kickback in the contract price charged by a prime Contractor to the United States or in the contract price charged by a subcontractor to a prime Contractor or higher tier subcontractor.

(c) (1) The Contractor shall have in place and follow reasonable procedures designed to prevent and detect possible violations described in paragraph (b) of this clause in its own operations and direct business relationships.

(2) When the Contractor has reasonable grounds to believe that a violation described in paragraph (b) of this clause may have occurred, the Contractor shall promptly report in writing the possible violation. Such reports shall be made to the inspector general of the contracting agency, the head of the contracting agency if the agency does not have an inspector general, or the Department of Justice.

(3) The Contractor shall cooperate fully with any Federal agency investigating a possible violation described in paragraph (b) of this clause.

(4) The Contracting Officer may
(i) offset the amount of the kickback against any monies owed by the United States under the prime contract and/or
(ii) direct that the Prime Contractor withhold from sums owed a subcontractor under the prime contract the amount of the kickback. The Contracting Officer may order that monies withheld under subdivision (c)(4)(ii) of this clause be paid over to the Government unless the Government has already offset those monies under subdivision (c)(4)(i) of this clause. In either case, the Prime Contractor shall notify the Contracting Officer when the monies are withheld.

(5) The Contractor agrees to incorporate the substance of this clause, including subparagraph (c)(5) but excepting subparagraph (c)(1), in all subcontracts under this contract which exceed \$100,000.

7. *FAR 52.203-8 CANCELLATION, RESCISSION, AND RECOVERY OF FUNDS FOR ILLEGAL OR IMPROPER ACTIVITY (JAN 1997)

(a) If the Government receives information that a contractor or a person has engaged in conduct constituting a violation of subsection (a), (b), (c), or (d) of Section 27 of the Office of Federal Procurement Policy Act (41 U.S.C. 423) (the Act), as amended by section 4304 of the National Defense Authorization Act for Fiscal Year 1996 (Pub. L. 104-106), the Government may--

(1) Cancel the solicitation, if the contract has not yet been awarded or issued; or
(2) Rescind the contract with respect to which--
(i) The Contractor or someone acting for the Contractor has been convicted for an offense where the conduct constitutes a violation of subsection 27 (a) or (b) of the Act for the purpose of either--
(A) Exchanging the information covered by such subsections for anything of value; or
(B) Obtaining or giving anyone a competitive advantage in the award of a Federal agency procurement contract; or

(ii) The head of the contracting activity has determined, based upon a preponderance of the evidence, that the Contractor or someone acting for the Contractor has engaged in conduct constituting an offense punishable under subsection 27(e)(1) of the Act.

(b) If the Government rescinds the contract under paragraph (a) of this clause, the Government is entitled to recover, in addition to any penalty prescribed by law, the amount expended under the contract.

(c) The rights and remedies of the Government specified herein are not exclusive, and are in addition to any other rights and remedies provided by law, regulation, or under this contract.

8. DFARS 252.203-7001 PROHIBITION ON PERSONS CONVICTED OF FRAUD OR OTHER DEFENSE—CONTRACT-RELATED FELONIES (MARCH 1999)

- (a) Definitions.
As used in this clause--
 - (1) "Arising out of a contract with the "DoD" means any any act in connection with--
 - (i) Attempting to obtain;
 - (ii) Obtaining; or
 - (iii) Performing a contract or first-tier subcontract of any department, or component of the Department of Defense (DoD).
 - (2) "Conviction of fraud or any other felony," means any conviction for fraud or a felony in violation of state or Federal criminal statutes, whether entered on a verdict or plea, including a plea of nolo contendere, for which sentence has been imposed.
 - (3) "Date of conviction," means the date judgement was entered against the individual.
- (b) Any individual who is convicted after September 29, 1988 of fraud or any other felony arising out of a contract with the DoD is prohibited from serving--
 - (1) In a management or supervisory capacity on any DoD contract or first-tier subcontract;
 - (2) On board of directors of any DoD Contractor or first-tier subcontractor;
 - (3) As a consultant to any DoD Contractor or first-tier subcontractor; or
 - (4) In any other capacity with the authority to influence, advise, or control the decisions of any DoD contractor or subcontractor with regard to any DoD contract or first-tier subcontract.
- (c) Unless waived, the prohibition in paragraph (b) of this clause applies for not less than five years from the date of conviction.
- (d) 10 U.S.C. 2408 provides that a defense Contractor or first-tier subcontractor shall be subject to a criminal penalty of not more than \$500,000 if convicted of knowingly--
 - (1) Employing a person under a prohibition in paragraph (b) of this clause;
 - (2) Allowing such a person to serve on the board of directors of Contractor or first-tier subcontractor.
- (e) In addition to the criminal penalties contained in 10 U.S.C. 2408, the Government may consider other available remedies, such as--
 - (1) Suspension or debarment;
 - (2) Cancellation of the contract at no cost to the Government; or
 - (3) Termination of the contract for default.
- (f) The Contractor may submit written requests for waiver of the prohibition in paragraph (b) of this clause to the Contracting Officer. Requests shall clearly identify--
 - (1) The person involved;
 - (2) The nature of the conviction and resultant sentence or punishment imposed;
 - (3) The reasons for the requested waiver; and
 - (4) An explanation of why a waiver is in the interest of national security.
- (g) The Contractor agrees to include the substance of this clause appropriately modified to reflect the identity and relationship of the parties, in all first-tier subcontracts exceeding the simplified acquisition threshold in Part 2 of the Federal Acquisition Regulation, except those for commercial items or components.
- (h) Pursuant to 10 U.S.C.2408(c), defense contractors and subcontractors may obtain information as to whether a particular has been convicted of fraud or any other felony arising out of a contract with the DoD by contracting The Office of Justice Programs, The Denial of Federal Benefits Office, U.S. Department of Justice, telephone (202) 616-3507.

9. RESERVED

10. *FAR 52.203-10 PRICE OR FEE ADJUSTMENT FOR ILLEGAL OR IMPROPER ACTIVITY (JAN 1997)

(a) The Government, at its election, may reduce the price of a fixed-price type contract and the total cost and fee under a cost-type contract of profit or fee determined as set forth in paragraph (b) of this clause if the head of the contracting activity or designee determines that there was a violation of subsection 27(a), (b), or (c) of the Office of Federal Procurement Policy Act, as amended (41 U.S.C. 423), as implemented in section 3.104 of the Federal Acquisition Regulation.

(b) The price or fee reduction referred to in paragraph (a) of this clause shall be--

(1) For cost-plus-fixed-fee contracts, the amount of the fee specified in the contract at the time of award;

(2) For cost-plus-incentive-fee contracts, the target fee specified in the contract at the time of award, notwithstanding any minimum fee or "fee floor" specified in the contract;

(3) For cost-plus-award-fee contracts--

(i) The base fee established in the contract at the time of contract award;

(ii) If no base fee is specified in the contract, 30 percent of the amount of each award fee otherwise payable to the Contractor for each award fee evaluation period or at each award fee determination point.

(4) For fixed-price-incentive contracts, the Government may--

(i) Reduce the contract target price and contract target profit both by an amount equal to the initial target profit specified in the contract at the time of contract award; or

(ii) If an immediate adjustment to the contract target price and contract target profit would have a significant adverse impact on the incentive price revision relationship under the contract, or adversely affect the contract financing provisions, the Contracting Officer may defer such adjustment until establishment of the total final price of the contract. The total final price established in accordance with the incentive price revision provisions of the contract shall be reduced by an amount equal to the initial target profit specified in the contract at the time of contract award and such reduced price shall be the total final contract price.

(5) For firm-fixed-price contracts, by 10 percent of the initial contract price or a profit amount determined by the Contracting Officer from records or documents in existence prior to the date of the contract award.

(c) The Government may, at its election, reduce a prime contractor's price or fee in accordance with the procedures of paragraph (b) of this clause for violations of the Act by its subcontractors by an amount not to exceed the amount of profit or fee reflected in the subcontract at the time the subcontract was first definitively priced.

(d) In addition to the remedies in paragraphs (a) and (c) of this clause, the Government may terminate this contract for default. The rights and remedies of the Government specified herein are not exclusive, and are in addition to any other rights and remedies provided by law or under this contract.

11. *FAR 52.203-12 LIMITATION ON PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS (JUNE 2003)

(a) Definitions.

"Agency," as used in this clause, means executive agency as defined in 2.101.

"Covered Federal Action," as used in this clause, means any of the following Federal actions:

(1) The awarding of any Federal contract.

(2) The making of any Federal grant.

(3) The making of any Federal loan.

(4) The entering into of any cooperative agreement.

(5) The extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

"Indian tribe" and "tribal organization," as used in this clause, have the meaning provided in section 4 of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450B) and include Alaskan Natives.

"Influencing or attempting to influence," as used in this clause, means making, with the intent to influence, any communication to or appearance before an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any covered Federal action.

"Local government," as used in this clause, means a unit of government in a State and, if chartered, established, or otherwise recognized by a State for the performance of a governmental duty, including a local public authority, a special district, an intrastate district, a council of governments, a sponsor group representative organization, and any other instrumentality of a local government.

"Officer or employee of an agency," as used in this clause, includes the following individuals who are employed by an agency:

(1) An individual who is appointed to a position in the Government under title 5, United States Code, including a position under a temporary appointment.

(2) A member of the uniformed services, as defined in subsection 101(3), title 37, United States Code.

(3) A special Government employee, as defined in section 202, title 18, United States Code.

(4) An individual who is a member of a Federal advisory committee, as defined by the Federal Advisory Committee Act, title 5, United States Code, appendix 2.

"Person," as used in this clause, means an individual, corporation, company, association, authority, firm, partnership, society, State and local government, regardless of whether such entity is operated for profit, or not for profit. This term excludes an Indian tribe, tribal organization, or any other Indian organization with respect to expenditures specifically permitted by other Federal law.

"Reasonable compensation," as used in this clause, means, with respect to a regularly employed officer or employee of any person, compensation that is consistent with the normal compensation for such officer or employee for work that is not furnished to, not funded by, or not furnished in cooperation with the Federal Government.

"Reasonable payment," as used in this clause, means, with respect to professional and other technical services, a payment in an amount that is consistent with the amount normally paid for such services in the private sector.

"Recipient," as used in this clause, includes the Contractor and all subcontractors. This term excludes an Indian tribe, tribal organization, or any other Indian organization with respect to expenditures specifically permitted by other Federal law.

"Regularly employed," as used in this clause, means, with respect to an officer or employee of a person requesting or receiving a Federal contract, an officer or employee who is employed by such person for at least 130 working days within 1 year immediately preceding the date of the submission that initiates agency consideration of such person for receipt of such contract. An officer or employee who is employed by such person for less than 130 working days within 1 year immediately preceding the date of the submission that initiates agency consideration of such person shall be considered to be regularly employed as soon as he or she is employed by such person for 130 working days.

"State," as used in this clause, means a State of the United States, the District of Columbia, and an outlying area of the United States, an agency or instrumentality of a State, and multi-State, regional, or interstate entity having governmental duties and powers.

(b) Prohibitions.

(1) Section 1352 of title 31, United States Code, among other things, prohibits a recipient of a Federal Contract, grant, loan, or cooperative agreement from using appropriated funds to pay any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any of the following covered Federal actions: The awarding of any Federal contract; the making of any Federal grant; the making of any Federal loan; the entering into of any cooperative agreement; or the modification of any Federal contract, grant, loan, or cooperative agreement.

(2) The Act also requires Contractors to furnish a disclosure if any funds other than Federal appropriated funds (including profit or fee received under a covered Federal transaction) have been paid, or will be paid, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a Federal contract, grant, loan, or cooperative agreement.

(3) The prohibitions of the Act do not apply under the following conditions:

(i) Agency and legislative liaison by own employees.

(A) The prohibition on the use of appropriated funds, in subparagraph (b)(1) of this clause, does not apply in the case of a payment of reasonable compensation made to an officer or employee of a person requesting or receiving a covered Federal action if the payment is for agency and legislative liaison activities not directly related to a covered Federal action.

(B) For purposes of subdivision (b)(3)(i)(A) of this clause, providing any information specifically requested by an agency or Congress is permitted at any time.

(C) The following agency and legislative liaison activities are permitted at any time where they are not related to a specific solicitation for any covered Federal action:

(1) Discussing with an agency the qualities and characteristics (including individual demonstrations) of the person's products or services, conditions or terms of sale, and service capabilities.

(2) Technical discussions and other activities regarding the application or adaptation of the person's products or services for an agency's use.

(D) The following agency and legislative liaison activities are permitted where they are prior to formal solicitation of any covered Federal action--

(1) Providing any information not specifically requested but necessary for an agency to make an informed decision about initiation of a covered Federal action;

(2) Technical discussions regarding the preparation of an unsolicited proposal prior to its official submission; and

(3) Capability presentations by persons seeking awards from an agency pursuant to the provisions of the Small Business Act, as amended by Pub. L. 95-507, and subsequent amendments.

(E) Only those services expressly authorized by subdivision (b)(3)(i)(A) of this clause are permitted under this clause.

(ii) Professional and technical services.

(A) The prohibition on the use of appropriated funds, in subparagraph (b)(1) of this clause, does not apply in the case of--

(1) A payment of reasonable compensation made to an officer or employee of a person requesting or receiving a covered Federal action or an extension, continuation, renewal, amendment, or modification of a covered Federal action, if payment is for professional or technical services rendered directly in the preparation, submission, or negotiation of any bid, proposal, or application for that Federal action or for meeting requirements imposed by or pursuant to law as a condition for receiving that Federal action.

(2) Any reasonable payment to a person, other than an officer or employee of a person requesting or receiving a covered Federal action or an extension, continuation, renewal, amendment, or modification of a covered Federal action if the payment is for professional or technical services rendered directly in the preparation, submission, or negotiation of any bid, proposal, or application for that Federal action or for meeting requirements imposed by or pursuant to law as a condition for receiving that Federal action. Persons other than officers or employees of a person requesting or receiving a covered Federal action include consultants and trade associations.

(B) For purposes of subdivision (b)(3)(ii)(A) of this clause, "professional and technical services" shall be limited to advice and analysis directly applying any professional or technical discipline. For example, drafting of a legal document accompanying a bid or proposal by a lawyer is allowable. Similarly, technical advice provided by an engineer on the performance or operational capability of a piece of equipment rendered directly in the negotiation of a contract is allowable. However, communications with the intent to influence made by a professional (such as a licensed lawyer) or a technical person (such as a licensed accountant) are not allowable under this section unless they provide advice and analysis directly applying their professional or technical expertise and unless the advice or analysis is rendered directly and solely in the preparation, submission or negotiation of a covered Federal action. Thus, for example, communications with the intent to influence made by a lawyer that do not provide legal advice or analysis directly and solely related to the legal aspects of his or her client's proposal, but generally advocate one proposal over another are not allowable under this section because the lawyer is not providing professional legal services. Similarly, communications with the intent to influence made by an engineer providing an engineering analysis prior to the preparation or submission of a bid or proposal are not

allowable under this section since the engineer is providing technical services but not directly in the preparation, submission or negotiation of a covered Federal action.

(C) Requirements imposed by or pursuant to law as a condition for receiving a covered Federal award include those required by law or regulation and any other requirements in the actual award documents.

(D) Only those services expressly authorized by subdivisions (b)(3)(ii)(A)(1) and (2) of this clause are permitted under this clause.

(E) The reporting requirements of FAR 3.803(a) shall not apply with respect to payments of reasonable compensation made to regularly employed officers or employees of a person.

(iii) Disclosure.

(A) The Contractor who requests or receives from an agency a Federal contract shall file with that agency a disclosure form, OMB standard form LLL, Disclosure of Lobbying Activities, if such person has made or has agreed to make any payment using nonappropriated funds (to include profits from any covered Federal action), which would be prohibited under subparagraph (b)(1) of this clause, if paid for with appropriated funds.

(B) The Contractor shall file a disclosure form at the end of each calendar quarter in which there occurs any event that materially affects the accuracy of the information contained in any disclosure form previously filed by such person under subparagraph (c)(1) of this clause. An event that materially affects the accuracy of the information reported includes--

(1) A cumulative increase of \$25,000 or more in the amount paid or expected to be paid for influencing or attempting to influence a covered Federal action; or

(2) A change in the person(s) or individual(s) influencing or attempting to influence a covered Federal action; or

(3) A change in the officer(s), employee(s), or Member(s) contacted to influence or attempt to influence a covered Federal action.

(C) The Contractor shall require the submittal of a certification, and if required, a disclosure form by any person who requests or receives any subcontract exceeding \$100,000 under the Federal contract.

(D) All subcontractor disclosure forms (but not certifications) shall be forwarded from tier to tier until received by the prime Contractor. The prime Contractor shall submit all disclosures to the Contracting Officer at the end of the calendar quarter in which the disclosure form is submitted by the subcontractor. Each subcontractor certification shall be retained in the subcontract file of the awarding Contractor.

(iv) Agreement. The Contractor agrees not to make any payment prohibited by this clause.

(v) Penalties.

(A) Any person who makes an expenditure prohibited under paragraph (a) of this clause or who fails to file or amend the disclosure form to be filed or amended by paragraph (b) of this clause shall be subject to civil penalties as provided for by 31 U.S.C. 1352. An imposition of a civil penalty does not prevent the Government from seeking any other remedy that may be applicable.

(B) Contractors may rely without liability on the representation made by their subcontractors in the certification and disclosure form.

(vi) Cost allowability. Nothing in this clause makes allowable or reasonable any costs which would otherwise be unallowable or unreasonable. Conversely, costs made specifically unallowable by the requirements in this clause will not be made allowable under any other provision.

12. DFARS 252.203-7002 DISPLAY OF DOD HOTLINE POSTER (DEC 1991) **(For Military Contracts Exceeding \$5,000,000)**

(a) The Contractor shall display prominently in common work areas within business segments performing work under Department of Defense (DoD) contracts, DoD Hotline Posters prepared by DoD Office of the Inspector General.

(b) DoD Hotline Posters may be obtained from the DoD Inspector General, ATTN: Defense Hotline, 400 Army Navy Drive, Washington DC 22202-2884.

(c) The Contract need not comply with paragraph (a) of this clause if it has established a mechanism, such as a hotline, by which employees may report suspected instances of improper conduct, and instructions that encourage employees to make such reports.

13. *FAR 52.204-4 PRINTED OR COPIED DOUBLE-SIDED ON RECYCLED PAPER (AUG 2000)

(a) Definitions. As used in this clause—

“Postconsumer material” means a material or finished product that has served its intended use and has been discarded for disposal or recovery, having completed its life as a consumer item. Postconsumer material is a part of the broader category of “recovered material.” For paper and paper products, postconsumer material means “postconsumer fiber” defined by the U.S. Environmental Protection Agency (EPA) as—

(1) Paper, paperboard, and fibrous materials from retail stores, office buildings, homes, and so forth, after they have passed through their end-usage as a consumer item, including: used corrugated boxes; old newspapers; old magazines; mixed waste paper; tabulating cards; and used cordage; or

(2) All paper, paperboard, and fibrous materials that enter and are collected from municipal solid waste; but not

(3) Fiber derived from printers' over-runs, converters' scrap, and over-issue publications.

“Printed or copied double-sided” means printing or reproducing a document so that information is on both sides of a sheet of paper.

“Recovered material,” for paper and paper products, is defined by EPA in its Comprehensive Procurement Guideline as “recovered fiber” and means the following materials:

(1) Postconsumer fiber; and

(2) Manufacturing wastes such as—

(i) Dry paper and paperboard waste generated after completion of the papermaking process (that is, those manufacturing operations up to and including the cutting and trimming of the paper machine reel into smaller rolls or rough sheets) including: envelope cuttings, bindery trimmings, and other paper and paperboard waste resulting from printing, cutting, forming, and other converting operations; bag, box, and carton manufacturing wastes; and butt rolls, mill wrappers, and rejected unused stock; and

(ii) Repulped finished paper and paperboard from obsolete inventories of paper and paperboard manufacturers, merchants, wholesalers, dealers, printers, converters, or others.

(b) In accordance with Section 101 of Executive Order 13101 of September 14, 1998, Greening the Government through Waste Prevention, Recycling, and Federal Acquisition, the Contractor is encouraged to submit paper documents, such as offers, letters, or reports, that are printed or copied double-sided on recycled paper that meet minimum content standards specified in Section 505 of Executive Order 13101, when not using electronic commerce methods to submit information or data to the Government.

(c) If the Contractor cannot purchase high-speed copier paper, offset paper, forms bond, computer printout paper, carbonless paper, file folders, white wove envelopes, writing and office paper, book paper, cotton fiber paper, and cover stock meeting the 30 percent postconsumer material standard for use in submitting paper documents to the Government, it should use paper containing no less than 20 percent postconsumer material. This lesser standard should be used only when paper meeting the 30 percent postconsumer material standard is not obtainable at a reasonable price or does not meet reasonable performance standards.

(End of clause)

14. DFARS 252.204-7003 CONTROL OF GOVERNMENT PERSONNEL WORK PRODUCT (APR 1992)

The Contractor's procedures for protecting against unauthorized disclosure of information shall not require Department of Defense employees or members of the Armed Forces to relinquish control of their work products, whether classified or not, to the Contractor.

15. *FAR 52.209-6 PROTECTING THE GOVERNMENTS INTEREST WHEN SUBCONTRACTING WITH CONTRACTORS DEBARRED, SUSPENDED, OR PROPOSED FOR DEBARMENT (JUL 1995)

(a) The Government suspends or debar Contractors to protect the Government's interests. The Contractor shall not enter into any subcontract in excess of \$25,000 with a Contractor that is debarred, suspended, or proposed for debarment unless there is a compelling reason to do so.

(b) The Contractor shall require each proposed first-tier subcontractor, whose subcontract will exceed \$25,000, to disclose to the Contractor, in writing, whether as of the time of award of the subcontract, the subcontractor, or its principals, is or is not debarred, suspended, or proposed for debarment by the Federal Government.

(c) A corporate office or a designee of the Contractor shall notify the Contracting Officer, in writing, before entering into a subcontract with a party that is debarred, suspended, or proposed for debarment (see FAR 9.404 for information on the List of Parties Excluded from Procurement Programs). The notice must include the following:

- (1) The name of the subcontractor.
- (2) The Contractor's knowledge of the reasons for the subcontractor being on the List of Parties Excluded from Procurement Programs.
- (3) The compelling reason(s) for doing business with the subcontractor notwithstanding its inclusion on the List of Parties Excluded From Procurement Programs.
- (4) The systems and procedures the Contractor has established to ensure that it is fully protecting the Government's interests when dealing with such subcontractor in view of the specific basis for the party's debarment, suspension, or proposed debarment.

16. DFARS 252.209-7004 SUBCONTRACTING WITH FIRMS THAT ARE OWNED OR CONTROLLED BY THE GOVERNMENT OF A TERRORIST COUNTY (MAR 1998)

(a) Unless the Government determines that there is a compelling reason to do so, the Contractor shall not enter into any subcontract in excess of \$25,000 with a firm, or a subsidiary of a firm, that is identified, on the List of Parties Excluded from Federal Procurement and Nonprocurement Programs, as being ineligible for the award of Defense contracts or subcontracts because it is owned or controlled by the government of a terrorist country.

(b) A corporate officer or a designee of the Contractor shall notify the Contracting Officer, in writing, before entering into a subcontract with a party that is identified, on the List of Parties Excluded from Federal Procurement and Nonprocurement Programs, as being ineligible for the award of Defense contracts or subcontracts because it is owned or controlled by the government of a terrorist country. The notice must include the name of the proposed subcontractor and the compelling reason(s) for doing business with the subcontractor notwithstanding its inclusion on the List of Parties Excluded From Federal Procurement and Nonprocurement Programs.

(End of clause)

17. *FAR 52.211-15 DEFENSE PRIORITY AND ALLOCATION REQUIREMENTS (SEP 1990) [For Military Contract's Only]

This is a rated order certified for national defense use, and the Contractor shall follow all the requirements of the Defense Priorities and Allocations System regulation (15 CFR 700).

18. ~~DELETED FAR 52.211-18~~ ————— ~~VARIATION IN ESTIMATED QUANTITY (APR 1984)~~

~~If the quantity of a unit priced item in this contract is an estimated quantity and the actual quantity of the unit priced item varies more than 15 percent above or below the estimated quantity, an equitable adjustment in the contract price shall be made upon demand of either party. The equitable adjustment shall be based upon any increase or decrease in costs due solely to the variation above 115 percent or below 85 percent of the estimated quantity. If the quantity variation is such as to cause an increase in the time necessary for completion, the Contractor may request, in writing, an extension of time, to be received by the Contracting Officer within 10 days from the beginning of the delay, or within such further period as may be granted by the Contracting Officer before the date of final settlement of the contract. Upon the receipt of a written request for an extension, the Contracting Officer shall ascertain the facts and make an adjustment for extending the completion date as, in the judgement of the Contracting Officer, is justified.~~

19. *FAR 52.215-2 AUDIT AND RECORDS-NEGOTIATION (JUNE 1999)

(a) As used in this clause, "records" includes books, documents, accounting procedures and practices, and other data, regardless of type and regardless of whether such items are in written form, in the form of computer data, or in any other form.

(b) Examination of costs. If this is a cost-reimbursement, incentive, time-and-materials, labor-hour, or price redeterminable contract, or any combination of these, the Contractor shall maintain and the Contracting Officer, or an authorized representative of the Contracting Officer, shall have the right to examine and audit all records and other evidence sufficient to reflect properly all costs claimed to have been incurred or anticipated to be incurred directly or indirectly in performance of this contract. This right of examination shall include inspection at all reasonable times of the Contractor's plants, or parts of them, engaged in performing the contract.

(c) Cost or pricing data. If the Contractor has been required to submit cost or pricing data in connection with any pricing action relating to this contract, the Contracting Officer, or an authorized representative of the Contracting Officer, in order to evaluate the accuracy, completeness, and currency of the cost or pricing data, shall have the right to examine and audit all of the Contractor's records, including computations and projections, related to--

- (1) The proposal for the contract, subcontract, or modification;
- (2) The discussions conducted on the proposal(s), including those related to negotiating;
- (3) Pricing of the contract, subcontract, or modification; or
- (4) Performance of the contract, subcontract or modification.

(d) Comptroller General--(1) The Comptroller General of the United States, or an authorized representative, shall have access to and the right to examine any of the Contractor's directly pertinent records involving transactions related to this contract or a subcontract hereunder.

(2) This paragraph may not be construed to require the Contractor or subcontractor to create or maintain any record that the Contractor or subcontractor does not maintain in the ordinary course of business or pursuant to a provision of law.

(e) Reports. If the Contractor is required to furnish cost, funding, or performance reports, the Contracting Officer or an authorized representative of the Contracting Officer shall have the right to examine and audit the supporting records and materials, for the purpose of evaluating--

(1) The effectiveness of the Contractor's policies and procedures to produce data compatible with the objectives of these reports; and

(2) The data reported.

(f) Availability. The Contractor shall make available at its office at all reasonable times the records, materials, and other evidence described in paragraphs (a), (b), (c), (d), and (e) of this clause, for examination, audit, or reproduction, until 3 years after final payment under this contract or for any shorter period specified in Subpart 4.7, Contractor Records Retention, of the Federal Acquisition Regulation (FAR), or for any longer period required by statute or by other clauses of this contract. In addition--

(1) If this contract is completely or partially terminated, the Contractor shall make available the records relating to the work terminated until 3 years after any resulting final termination settlement; and

(2) The Contractor shall make available records relating to appeals under the Disputes clause or to litigation or the settlement of claims arising under or relating to this contract shall be made available until such appeals, litigation, or claims are finally resolved.

(g) The Contractor shall insert a clause containing all the terms of this clause, including this paragraph (g), in all subcontracts under this contract that exceed the simplified acquisition threshold, and--

(1) That are cost-reimbursement, incentive, time-and-materials, labor-hour, or price-redeterminable type or any combination of these;

(2) For which cost or pricing data are required; or

(3) That require the subcontractor to furnish reports as discussed in paragraph (e) of this clause.

The clause may be altered only as necessary to identify properly the contracting parties and the Contracting Officer under the Government prime contract.

(End of clause)

20. *FAR 52.215-10 PRICE REDUCTION FOR DEFECTIVE COST OR PRICING DATA (OCT 1997)

(a) If any price, including profit or fee, negotiated in connection with this contract, or any cost reimbursable under this contract, was increased by any significant amount because--

(1) The Contractor or a subcontractor furnished cost or pricing data that were not complete, accurate, and current as certified in its Certificate of Current Cost or Pricing Data;

(2) A subcontractor or prospective subcontractor furnished the Contractor cost or pricing data that were not complete, accurate, and current as certified in the Contractor's Certificate of Current Cost or Pricing Data; or

(3) Any of these parties furnished data of any description that were not accurate, the price or cost shall be reduced accordingly and the contract shall be modified to reflect the reduction.

(b) Any reduction in the contract price under paragraph (a) of this clause due to defective data from a prospective subcontractor that was not subsequently awarded the subcontract shall be limited to the amount, plus applicable overhead and profit markup, by which--

(1) The actual subcontract; or

(2) The actual cost to the Contractor, if there was no subcontract, was less than the prospective subcontract cost estimate submitted by the Contractor; provided, that the actual subcontract price was not itself affected by defective cost or pricing data.

(c)(1) If the Contracting Officer determines under paragraph (a) of this clause that a price or cost reduction should be made, the Contractor agrees not to raise the following matters as a defense:

(i) The Contractor or subcontractor was a sole source supplier or otherwise was in a superior bargaining position and thus the price of the contract would not have been modified even if accurate, complete, and current cost or pricing data had been submitted.

(ii) The Contracting Officer should have known that the cost or pricing data in issue were defective even though the Contractor or subcontractor took no affirmative action to bring the character of the data to the attention of the Contracting Officer.

(iii) The contract was based on an agreement about the total cost of the contract and there was no agreement about the cost of each item procured under the contract.

(iv) The Contractor or subcontractor did not submit a Certificate of Current Cost or Pricing Data.

(2)(i) Except as prohibited by subdivision (c)(2)(ii) of this clause, an offset in an amount determined appropriate by the (2)(i) Except as prohibited by subdivision (c)(2)(ii) of this clause, an offset in an amount determined appropriate by the Contracting Officer based upon the facts shall be allowed against the amount of a contract price reduction if--

(A) The Contractor certifies to the Contracting Officer that, to the best of the Contractor's knowledge and belief, the Contractor is entitled to the offset in the amount requested; and

(B) The Contractor proves that the cost or pricing data were available before the "as of" date specified on its Certificate of Current Cost or Pricing Data, and that the data were not submitted before such date.

(ii) An offset shall not be allowed if--

(A) The understated data were known by the Contractor to be understated before the "as of" date specified on its Certificate of Current Cost or Pricing Data; or

(B) The Government proves that the facts demonstrate that the contract price would not have increased in the amount to be offset even if the available data had been submitted before the "as of" date specified on its Certificate of Current Cost or Pricing Data.

(d) If any reduction in the contract price under this clause reduces the price of items for which payment was made prior to the date of the modification reflecting the price reduction, the Contractor shall be liable to and shall pay the United States at the time such overpayment is repaid--

(1) Simple interest on the amount of such overpayment to be computed from the date(s) of overpayment to the Contractor to the date the Government is repaid by the Contractor at the applicable underpayment rate effective for each quarter prescribed by the Secretary of the Treasury under 26 U.S.C. 6621(a)(2); and

(2) A penalty equal to the amount of the overpayment, if the Contractor or subcontractor knowingly submitted cost or pricing data that were incomplete, inaccurate, or noncurrent.

(End of clause)

21. *FAR 52.215-12 SUBCONTRACTOR COST OR PRICING DATA (OCT 1997)

(a) Before awarding any subcontract expected to exceed the threshold for submission of cost or pricing data at FAR 15.403-4, on the date of agreement on price or the date of award, whichever is later; or before pricing any subcontract modification involving a pricing adjustment expected to exceed the threshold for submission of cost or pricing data at FAR 15.403-4, the Contractor shall require the subcontractor to submit cost or pricing data (actually or by specific identification in writing), unless an exception under FAR 15.403-1 applies.

(b) The Contractor shall require the subcontractor to certify in substantially the form prescribed in FAR 15.406-2 that, to the best of its knowledge and belief, the data submitted under paragraph (a) of this clause were accurate, complete, and current as of the date of agreement on the negotiated price of the subcontract or subcontract modification.

(c) In each subcontract that exceeds the threshold for submission of cost or pricing data at FAR 15.403-4, when entered into, the Contractor shall insert either--

(1) The substance of this clause, including this paragraph (c), if paragraph (a) of this clause requires submission of cost or pricing data for the subcontract; or

(2) The substance of the clause at FAR 52.215-13, Subcontractor Cost or Pricing Data--
Modifications.

(End of clause)

22. *FAR 52.215-15 PENSION ADJUSTMENTS AND ASSET REVERSIONS (DEC 1998)

(a) The Contractor shall promptly notify the Contracting Officer in writing when it determines that it will terminate a defined-benefit pension plan or otherwise recapture such pension fund assets.

(b) For segment closings, pension plan terminations, or curtailment of benefits, the adjustment amount shall be the amount measured, assigned, and allocated in accordance with 48 CFR 9904.413-50(c)(12) for contracts and subcontracts that are subject to Cost Accounting Standards (CAS) Board rules and regulations (48 CFR Chapter 99). For contracts and subcontracts that are not subject to CAS, the adjustment amount shall be the amount measured, assigned, and allocated in accordance with 48 CFR 9904.413-50(c)(12), except the numerator of the fraction at 48 CFR 9904.413-50(c)(12)(vi) shall be the sum of the pension plan costs allocated to all non-CAS-covered contracts and subcontracts that are subject to Federal Acquisition Regulation (FAR) Subpart 31.2 or for which cost or pricing data were submitted.

(c) For all other situations where assets revert to the Contractor, or such assets are constructively received by it for any reason, the Contractor shall, at the Government's option, make a refund or give a credit to the Government for its equitable share of the gross amount withdrawn. The Government's equitable share shall reflect the Government's participation in pension costs through those contracts for which cost or pricing data were submitted or that are subject to FAR Subpart 31.2.

(d) The Contractor shall include the substance of this clause in all subcontracts under this contract that meet the applicability requirement of FAR 15.408(g).

(End of clause)

23. *FAR 52.215-16 FACILITIES CAPITAL COST OF MONEY (JUNE 2003)

(a) Facilities capital cost of money will be an allowable cost under the contemplated contract, if the criteria for allowability in FAR 31.205-10(b) are met. One of the allowability criteria requires the prospective contractor to propose facilities capital cost of money in its offer.

(b) If the prospective Contractor does not propose this cost, the resulting contract will include the clause Waiver of Facilities Capital Cost of Money.
(End of provision)

24. *FAR 52.215-17 WAIVER OF FACILITIES CAPITAL COST OF MONEY (OCT 1997)

The Contractor did not include facilities capital cost of money as a proposed cost of this contract. Therefore, it is an unallowable cost under this contract.
(End of clause)

25. *FAR 52.215-18 REVERSION OR ADJUSTMENT OF PLANS FOR POST RETIREMENT BENEFITS (PRB) OTHER THAN PENSIONS (OCT 1997)

The Contractor shall promptly notify the Contracting Officer in writing when it determines that it will terminate or reduce a PRB plan. If PRB fund assets revert, or inure, to the Contractor or are constructively received by it under a plan termination or otherwise, the Contractor shall make a refund or give a credit to the Government for its equitable share as required by FAR 31.205-6(o)(6). The Contractor shall include the substance of this clause in all subcontracts under this contract that meet the applicability requirements of FAR 15.408(j).

(End of clause)

26. *FAR 52.219-4 NOTICE OF PRICE EVALUATION PREFERENCE FOR HUBZONE SMALL BUSINESS CONCERNS (JAN 1999)

(a) *Definition.* "HUBZone small business concern," as used in this clause, means a small business concern that appears on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration.

(b) *Evaluation preference.* (1) Offers will be evaluated by adding a factor of 10 percent to the price of all offers, except—

(i) Offers from HUBZone small business concerns that have not waived the evaluation preference;

(ii) Otherwise successful offers from small business concerns;

(iii) Otherwise successful offers of eligible products under the Trade Agreements Act when the dollar threshold for application of the Act is exceeded (see 25.402 of the Federal Acquisition Regulation (FAR)); and

(iv) Otherwise successful offers where application of the factor would be inconsistent with a Memorandum of Understanding or other international agreement with a foreign government.

(2) The factor of 10 percent shall be applied on a line item basis or to any group of items on which award may be made. Other evaluation factors described in the solicitation shall be applied before application of the factor.

(3) A concern that is both a HUBZone small business concern and a small disadvantaged business concern will receive the benefit of both the HUBZone small business price evaluation preference and the small disadvantaged business price evaluation adjustment (see FAR clause 52.219-23). Each applicable price evaluation

preference or adjustment shall be calculated independently against an offeror's base offer. These individual preference amounts shall be added together to arrive at the total evaluated price for that offer.

(c) *Waiver of evaluation preference.* A HUBZone small business concern may elect to waive the evaluation preference, in which case the factor will be added to its offer for evaluation purposes. The agreements in paragraph (d) of this clause do not apply if the offeror has waived the evaluation preference.

[] Offeror elects to waive the evaluation preference.

(d) *Agreement.* A HUBZone small business concern agrees that in the performance of the contract, in the case of a contract for—

(1) Services (except construction), at least 50 percent of the cost of personnel for contract performance will be spent for employees of the concern or employees of other HUBZone small business concerns;

(2) Supplies (other than procurement from a nonmanufacturer of such supplies), at least 50 percent of the cost of manufacturing, excluding the cost of materials, will be performed by the concern or other HUBZone small business concerns;

(3) General construction, at least 15 percent of the cost of the contract performance incurred for personnel will be spent on the concern's employees or the employees of other HUBZone small business concerns; or

(4) Construction by special trade contractors, at least 25 percent of the cost of the contract performance incurred for personnel will be spent on the concern's employees or the employees of other HUBZone small business concerns.

(e) A HUBZone joint venture agrees that in the performance of the contract, the applicable percentage specified in paragraph (d) of this clause will be performed by the HUBZone small business participant or participants.

(f) A HUBZone small business concern nonmanufacturer agrees to furnish in performing this contract only end items manufactured or produced by HUBZone small business manufacturer concerns. This paragraph does not apply in connection with construction or service contracts.

(End of clause)

27. *FAR 52.219-8

UTILIZATION OF SMALL BUSINESS CONCERNS (OCT 2000)

(a) It is the policy of the United States that small business concerns, veteran-owned small business concerns, service-disabled veteran-owned small business concerns, HUBZone small business concerns, small disadvantaged business concerns, and women-owned small business concerns shall have the maximum practicable opportunity to participate in performing contracts let by any Federal agency, including contracts and subcontracts for subsystems, assemblies, components, and related services for major systems. It is further the policy of the United States that its prime contractors establish procedures to ensure the timely payment of amounts due pursuant to the terms of their subcontracts with small business concerns, veteran-owned small business concerns, service-disabled veteran-owned small business concerns, HUBZone small business concerns, small disadvantaged business concerns, and women-owned small business concerns.

(b) The Contractor hereby agrees to carry out this policy in the awarding of subcontracts to the fullest extent consistent with efficient contract performance. The Contractor further agrees to cooperate in any studies or surveys as may be conducted by the United States Small Business Administration or the awarding agency of the United States as may be necessary to determine the extent of the Contractor's compliance with this clause.

(c) *Definitions.* As used in this contract—

“HUBZone small business concern” means a small business concern that appears on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration.

“Service-disabled veteran-owned small business concern” —

(1) Means a small business concern—

(i) Not less than 51 percent of which is owned by one or more service-disabled veterans or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more service-disabled veterans; and

(ii) The management and daily business operations of which are controlled by one or more service-disabled veterans or, in the case of a veteran with permanent and severe disability, the spouse or

permanent caregiver of such veteran.

(2) Service-disabled veteran means a veteran, as defined in 38 U.S.C. 101(2), with a disability that is service-connected, as defined in 38 U.S.C. 101(16).

“Small business concern” means a small business as defined pursuant to Section 3 of the Small Business Act and relevant regulations promulgated pursuant thereto.

“Small disadvantaged business concern” means a small business concern that represents, as part of its offer that—

(1) It has received certification as a small disadvantaged business concern consistent with 13 CFR part 124, Subpart B;

(2) No material change in disadvantaged ownership and control has occurred since its certification;

(3) Where the concern is owned by one or more individuals, the net worth of each individual upon whom the certification is based does not exceed \$750,000 after taking into account the applicable exclusions set forth at 13 CFR 124.104(c)(2); and

(4) It is identified, on the date of its representation, as a certified small disadvantaged business in the database maintained by the Small Business Administration (PRO-Net).

“Veteran-owned small business concern” means a small business concern—

(1) Not less than 51 percent of which is owned by one or more veterans (as defined at 38 U.S.C. 101(2)) or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more veterans; and

(2) The management and daily business operations of which are controlled by one or more veterans.

“Women-owned small business concern” means a small business concern—

(1) That is at least 51 percent owned by one or more women, or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; and

(2) Whose management and daily business operations are controlled by one or more women.

(d) Contractors acting in good faith may rely on written representations by their subcontractors regarding their status as a small business concern, a veteran-owned small business concern, a service-disabled veteran-owned small business concern, a HUBZone small business concern, a small disadvantaged business concern, or a women-owned small business concern.

(End of clause)

28. *FAR 52.219-9 SMALL BUSINESS SUBCONTRACTING PLAN (JAN 2002) [When Contracting By Negotiations]

(a) This clause does not apply to small business concerns.

(b) *Definitions.* As used in this clause—

“Commercial item” means a product or service that satisfies the definition of commercial item in section 2.101 of the Federal Acquisition Regulation.

“Commercial plan” means a subcontracting plan (including goals) that covers the offeror’s fiscal year and that applies to the entire production of commercial items sold by either the entire company or a portion thereof (*e.g.*, division, plant, or product line).

“Individual contract plan” means a subcontracting plan that covers the entire contract period (including option periods), applies to a specific contract, and has goals that are based on the offeror’s planned subcontracting in support of the specific contract, except that indirect costs incurred for common or joint purposes may be allocated on a prorated basis to the contract.

“Master plan” means a subcontracting plan that contains all the required elements of an individual contract plan, except goals, and may be incorporated into individual contract plans, provided the master plan has been approved.

“Subcontract” means any agreement (other than one involving an employer-employee relationship) entered into by a Federal Government prime Contractor or subcontractor calling for supplies or services required for performance of the contract or subcontract.

(c) The offeror, upon request by the Contracting Officer, shall submit and negotiate a subcontracting plan,

where applicable, that separately addresses subcontracting with small business, veteran-owned small business, service-disabled veteran-owned small business, HUBZone small business concerns, small disadvantaged business, and women-owned small business concerns. If the offeror is submitting an individual contract plan, the plan must separately address subcontracting with small business, veteran-owned small business, service-disabled veteran-owned small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns, with a separate part for the basic contract and separate parts for each option (if any). The plan shall be included in and made a part of the resultant contract. The subcontracting plan shall be negotiated within the time specified by the Contracting Officer. Failure to submit and negotiate the subcontracting plan shall make the offeror ineligible for award of a contract.

(d) The offeror's subcontracting plan shall include the following:

(1) Goals, expressed in terms of percentages of total planned subcontracting dollars, for the use of small business, veteran-owned small business, service-disabled veteran-owned small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns as subcontractors. The offeror shall include all subcontracts that contribute to contract performance, and may include a proportionate share of products and services that are normally allocated as indirect costs.

(2) A statement of—

(i) Total dollars planned to be subcontracted for an individual contract plan; or the offeror's total projected sales, expressed in dollars, and the total value of projected subcontracts to support the sales for a commercial plan;

(ii) Total dollars planned to be subcontracted to small business concerns;

(iii) Total dollars planned to be subcontracted to veteran-owned small business concerns;

(iv) Total dollars planned to be subcontracted to service-disabled veteran-owned small business;

(v) Total dollars planned to be subcontracted to HUBZone small business concerns;

(vi) Total dollars planned to be subcontracted to small disadvantaged business concerns; and

(vii) Total dollars planned to be subcontracted to women-owned small business concerns.

(3) A description of the principal types of supplies and services to be subcontracted, and an identification of the types planned for subcontracting to—

(i) Small business concerns;

(ii) Veteran-owned small business concerns;

(iii) Service-disabled veteran-owned small business concerns;

(iv) HUBZone small business concerns;

(v) Small disadvantaged business concerns; and

(vi) Women-owned small business concerns.

(4) A description of the method used to develop the subcontracting goals in paragraph (d)(1) of this clause.

(5) A description of the method used to identify potential sources for solicitation purposes (*e.g.*, existing company source lists, the Procurement Marketing and Access Network (PRO-Net) of the Small Business Administration (SBA), veterans service organizations, the National Minority Purchasing Council Vendor Information Service, the Research and Information Division of the Minority Business Development Agency in the Department of Commerce, or small, HUBZone, small disadvantaged, and women-owned small business trade associations). A firm may rely on the information contained in PRO-Net as an accurate representation of a concern's size and ownership characteristics for the purposes of maintaining a small, veteran-owned small, service-disabled veteran-owned small, HUBZone small, small disadvantaged, and women-owned small business source list. Use of PRONet as its source list does not relieve a firm of its responsibilities (*e.g.*, outreach, assistance, counseling, or publicizing subcontracting opportunities) in this clause.

(6) A statement as to whether or not the offeror included indirect costs in establishing subcontracting goals, and a description of the method used to determine the proportionate share of indirect costs to be incurred with—

(i) Small business concerns;

(ii) Veteran-owned small business concerns;

(iii) Service-disabled veteran-owned small business concerns;

(iv) HUBZone small business concerns;

- (v) Small disadvantaged business concerns; and
- (vi) Women-owned small business concerns.

(7) The name of the individual employed by the offeror who will administer the offeror's subcontracting program, and a description of the duties of the individual.

(8) A description of the efforts the offeror will make to assure that small business, veteran-owned small business, service-disabled veteran-owned small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns have an equitable opportunity to compete for subcontracts.

(9) Assurances that the offeror will include the clause of this contract entitled "Utilization of Small Business Concerns" in all subcontracts that offer further subcontracting opportunities, and that the offeror will require all subcontractors (except small business concerns) that receive subcontracts in excess of \$500,000 (\$1,000,000 for construction of any public facility) to adopt a subcontracting plan that complies with the requirements of this clause.

(10) Assurances that the offeror will—

(i) Cooperate in any studies or surveys as may be required;

(ii) Submit periodic reports so that the Government can determine the extent of compliance by the offeror with the subcontracting plan;

(iii) Submit Standard Form (SF) 294, Subcontracting Report for Individual Contracts, and/or SF 295, Summary Subcontract Report, in accordance with paragraph (j) of this clause. The reports shall provide information on subcontract awards to small business concerns, veteran-owned small business concerns, service-disabled veteran-owned small business concerns, HUBZone small business concerns, small disadvantaged business concerns, women-owned small business concerns, and Historically Black Colleges and Universities and Minority Institutions. Reporting shall be in accordance with the instructions on the forms or as provided in agency regulations.

(iv) Ensure that its subcontractors agree to submit SF 294 and SF 295.

(11) A description of the types of records that will be maintained concerning procedures that have been adopted to comply with the requirements and goals in the plan, including establishing source lists; and a description of the offeror's efforts to locate small business, veteran-owned small business, service-disabled veteran-owned small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns and award subcontracts to them. The records shall include at least the following (on a plant-wide or company-wide basis, unless otherwise indicated):

(i) Source lists (e.g., PRO-Net), guides, and other data that identify small business, veteran-owned small business, service-disabled veteran-owned small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns.

(ii) Organizations contacted in an attempt to locate sources that are small business, veteran-owned small business, service-disabled veteran-owned small business, HUBZone small business, small disadvantaged business, or women-owned small business concerns.

(iii) Records on each subcontract solicitation resulting in an award of more than \$100,000, indicating—

(A) Whether small business concerns were solicited and, if not, why not;

(B) Whether veteran-owned small business concerns were solicited and, if not, why not;

(C) Whether service-disabled veteran-owned small business concerns were solicited and, if not, why not;

(D) Whether HUBZone small business concerns were solicited and, if not, why not;

(E) Whether small disadvantaged business concerns were solicited and, if not, why not;

(F) Whether women-owned small business concerns were solicited and, if not, why not; and

(G) If applicable, the reason award was not made to a small business concern.

(iv) Records of any outreach efforts to contact—

(A) Trade associations;

(B) Business development organizations;

(C) Conferences and trade fairs to locate small, HUBZone small, small

disadvantaged, and women-owned small business sources; and

(D) Veterans service organizations.

(v) Records of internal guidance and encouragement provided to buyers through—

(A) Workshops, seminars, training, etc.; and

(B) Monitoring performance to evaluate compliance with the program's

requirements.

(vi) On a contract-by-contract basis, records to support award data submitted by the offeror to the Government, including the name, address, and business size of each subcontractor.

Contractors having commercial plans need not comply with this requirement.

(e) In order to effectively implement this plan to the extent consistent with efficient contract performance, the Contractor shall perform the following functions:

(1) Assist small business, veteran-owned small business, service-disabled veteran-owned small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns by arranging solicitations, time for the preparation of bids, quantities, specifications, and delivery schedules so as to facilitate the participation by such concerns. Where the Contractor's lists of potential small business, veteran-owned small business, service-disabled veteran-owned small business, HUBZone small business, small disadvantaged business, and women-owned small business subcontractors are excessively long, reasonable effort shall be made to give all such small business concerns an opportunity to compete over a period of time.

(2) Provide adequate and timely consideration of the potentialities of small business, veteran-owned small business, service-disabled veteran-owned small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns in all "make-or-buy" decisions.

(3) Counsel and discuss subcontracting opportunities with representatives of small business, veteran-owned small business, service-disabled veteran-owned small business, HUBZone small business, small disadvantaged business, and women-owned small business firms.

(4) Provide notice to subcontractors concerning penalties and remedies for misrepresentations of business status as small, veteran-owned small business, HUBZone small, small disadvantaged, or women-owned small business for the purpose of obtaining a subcontract that is to be included as part or all of a goal contained in the Contractor's subcontracting plan.

(f) A master plan on a plant or division-wide basis that contains all the elements required by paragraph (d) of this clause, except goals, may be incorporated by reference as a part of the subcontracting plan required of the offeror by this clause; provided —

(1) The master plan has been approved;

(2) The offeror ensures that the master plan is updated as necessary and provides copies of the approved master plan, including evidence of its approval, to the Contracting Officer; and

(3) Goals and any deviations from the master plan deemed necessary by the Contracting Officer to satisfy the requirements of this contract are set forth in the individual subcontracting plan.

(g) A commercial plan is the preferred type of subcontracting plan for contractors furnishing commercial items. The commercial plan shall relate to the offeror's planned subcontracting generally, for both commercial and Government business, rather than solely to the Government contract. Commercial plans are also preferred for subcontractors that provide commercial items under a prime contract, whether or not the prime contractor is supplying a commercial item.

(h) Prior compliance of the offeror with other such subcontracting plans under previous contracts will be considered by the Contracting Officer in determining the responsibility of the offeror for award of the contract.

(i) The failure of the Contractor or subcontractor to comply in good faith with—

(1) The clause of this contract entitled "Utilization Of Small Business Concerns;" or

(2) An approved plan required by this clause, shall be a material breach of the contract.

(j) The Contractor shall submit the following reports:

(1) *Standard Form 294, Subcontracting Report for Individual Contracts*. This report shall be submitted to the Contracting Officer semiannually and at contract completion. The report covers subcontract award data related to this contract. This report is not required for commercial plans.

(2) *Standard Form 295, Summary Subcontract Report*. This report encompasses all of the contracts with the awarding agency. It must be submitted semi-annually for contracts with the Department of Defense and annually for contracts with civilian agencies. If the reporting activity is covered by a commercial plan, the reporting activity must report annually all subcontract awards under that plan. All reports submitted at the close

of each fiscal year (both individual and commercial plans) shall include a breakout, in the Contractor's format, of subcontract awards, in whole dollars, to small disadvantaged business concerns by North American Industry Classification System (NAICS) Industry Subsector. For a commercial plan, the Contractor may obtain from each of its subcontractors a predominant NAICS Industry Subsector and report all awards to that subcontractor under its predominant NAICS Industry Subsector.
(End of clause)

29. *FAR 52.219-16 LIQUIDATED DAMAGES-SUBCONTRACTING PLAN (JAN 1999)

(a) Failure to make a good faith effort to comply with the subcontracting plan, as used in this clause, means a willful or intentional failure to perform in accordance with the requirements of the subcontracting plan approved under the clause in this contract entitled "Small Business Subcontracting Plan," or willful or intentional action to frustrate the plan.

(b) Performance shall be measured by applying the percentage goals to the total actual subcontracting dollars or, if a commercial plan is involved, to the pro rata share of actual subcontracting dollars attributable to Government contracts covered by the commercial plan. If, at contract completion, or in the case of a commercial plan, at the close of the fiscal year for which the plan is applicable, the Contractor has failed to meet its subcontracting goals and the Contracting Officer decides in accordance with paragraph (c) of this clause that the Contractor failed to make a good faith effort to comply with its subcontracting plan, established in accordance with the clause in this contract entitled "Small Business Subcontracting Plan," the Contractor shall pay the Government liquidated damages in an amount stated. The amount of probable damages attributable to the Contractor's failure to comply shall be an amount equal to the actual dollar amount by which the Contractor failed to achieve each subcontract goal.

(c) Before the Contracting Officer makes a final decision that the Contractor has failed to make such good faith effort, the Contracting Officer shall give the Contractor written notice specifying the failure and permitting the Contractor to demonstrate what good faith efforts have been made and to discuss the matter. Failure to respond to the notice may be taken as an admission that no valid explanation exists. If, after consideration of all the pertinent data, the Contracting Officer finds that the Contractor failed to make a good faith effort to comply with the subcontracting plan, the Contracting Officer shall issue a final decision to that effect and require that the Contractor pay the Government liquidated damages as provided in paragraph (b) of this clause.

(d) With respect to commercial plans, the Contracting Officer who approved the plan will perform the functions of the Contracting Officer under this clause on behalf of all agencies with contracts covered by a commercial plan.

(e) The Contractor shall have the right of appeal, under the clause in this contract entitled, Disputes, from any final decision of the Contracting Officer.

(f) Liquidated damages shall be in addition to any other remedies that the Government may have.

30. DFARS 252.219-7003 SMALL, SMALL DISADVANTAGED AND WOMEN-OWNED SMALL BUSINESS SUBCONTRACTING PLAN (DOD CONTRACTS) (APR 1996)

This clause supplements the Federal Acquisition Regulation 52.219-9, Small, Small Disadvantaged and Women-Owned Small Business Subcontracting Plan, clause of this contract.

(a) Definitions.

"Historically black colleges and universities," as used in this clause, means institutions determined by the Secretary of Education to meet the requirements of 34 CFR Section 608.2. The term also means any nonprofit research institution that was an integral part of such a college or university before November 14, 1986.

"Minority institutions," as used in this clause, means institutions meeting the requirements of Section 1046(3) of the Higher Education Act of 1965 (20 U.S.C. 1135d-5(3)). The term also includes Hispanic-serving institutions as defined in Section 316(b)(1) of such Act (20 U.S.C. 1059c(b)(1)).

(b) Except for company or division-wide commercial products subcontracting plans, the term "small disadvantaged business," when used in the FAR 52.219-9 clause, includes historically black colleges and universities and minority institutions in addition to small disadvantaged business concerns.

(c) Work under the contract or its subcontracts shall be credited toward meeting the small disadvantaged business concern goal required by paragraph (d) of the FAR 52.219-9 clause when:

(1) It is performed on Indian lands or in joint venture with an Indian tribe or a tribally-owned corporation, and

(2) It meets the requirements of 10 U.S.C. 2323a.

(d) Subcontracts awarded to workshops approved by the Committee for Purchase from People Who are Blind or Severely Disabled (41 U.S.C. 46-48), may be counted toward the Contractor's small business subcontracting goal.

(e) A mentor firm, under the Pilot Mentor-Protege Program established under Section 831 of Pub. L. 101-510, as amended, may count toward its small disadvantaged business goal, subcontracts awarded--

(1) Protege firms which are qualified organizations employing the severely handicapped; and

(2) Former protege firms that meet the criteria in Section 831(g)(4) of Pub. L. 101-510.

(f) The master plan approval referred to in paragraph (f) of the FAR 52.219-9 clause is approval by the Contractor's cognizant contract administration activity.

(g) In those subcontracting plans which specifically identify small, small disadvantaged, and women-owned businesses, the Contractor shall notify the Administrative Contracting Officer of any substitutions of firms that are not small, small disadvantaged, or women-owned small businesses for the firms listed in the subcontracting plan. Notifications shall be in writing and shall occur within a reasonable period of time after award of the subcontract. Contractor-specified formats shall be acceptable.

31. DFARS 252.219-7004

SMALL, SMALL DISADVANTAGED AND WOMEN-OWNED SMALL BUSINESS SUBCONTRACTING PLAN (TEST PROGRAM) (JUN 1997)

(a) Definition. "Subcontract," as used in this clause, means any agreement (other than one involving an employer-employee relationship) entered into by a Federal Government prime Contractor or subcontractor calling for supplies or services required for performance of the contract or subcontract.

(b) The Offeror's comprehensive small business subcontracting plan and its successors, which are authorized by and approved under the test program of Section 834 of Pub. L. 101-189, shall be included in and made a part of the resultant contract. Upon expulsion from the test program or expiration of the test program, the Contractor shall negotiate an individual subcontracting plan for all future contracts that meet the requirements of Section 211 of Publ. L. 95-507.

(c) The Contractor shall submit Standard Form 295, Summary Subcontract Report, in accordance with the instructions on the form, except--

(1) One copy of SF 295 and attachments shall be submitted to Director, Small and Disadvantaged Business Utilization, Office of the Deputy Under Secretary of Defense (International and Commercial Programs), 3061 Defense Pentagon, Room 2A338, Washington, DC 20301-3061; and

(2) Item 14, Remarks, shall be completed to include semi-annual cumulative--

(1) Small business, small disadvantaged business and women-owned small business goals; and

(2) Small business and small disadvantaged business goals, actual accomplishments, and percentages for each of the two designated industry categories.

(d) The failure of the Contractor or subcontractor to comply in good faith with (1) the clause of this contract entitled "Utilization of Small, Small Disadvantaged and Women-Owned Small Business Concerns," or (2) an approved plan required by this clause, shall be a material breach of the contract.

32. DFARS 252.219-7009

SECTION 8(a) DIRECT AWARD (MAR 2002)

(a) This contract is issued as a direct award between the contracting office and the 8(a) Contractor pursuant to the Partnership Agreement dated February 1, 2002, between the Small Business Administration (SBA) and the Department of Defense. Accordingly, the SBA, even if not identified in Section A of this contract, is the prime contractor and retains responsibility for 8(a) certification, for 8(a) eligibility determinations and related issues, and for providing counseling and assistance to the 8(a) Contractor under the 8(a) Program. The cognizant SBA district office is:

[To be completed by the Contracting Officer at the time of award]

(b) The contracting office is responsible for administering the contract and for taking any action on behalf of the Government under the terms and conditions of the contract; provided that the contracting office shall give advance notice to the SBA before it issues a final notice terminating performance, either in whole or in part, under the contract. The contracting office also shall coordinate with the SBA prior to processing any novation agreement. The contracting office may assign contract administration functions to a contract administration office.

(c) The 8(a) Contractor agrees that--

(1) It will notify the Contracting Officer, simultaneous with its notification to the SBA (as required by SBA's 8(a) regulations at 13 CFR 124.308), when the owner or owners upon whom 8(a) eligibility is based plan to relinquish ownership or control of the concern. Consistent with Section 407 of Pub. L. 100-656, transfer of ownership or control shall result in termination of the contract for convenience, unless the SBA waives the requirement for termination prior to the actual relinquishing of ownership and control; and

(2) It will not subcontract the performance of any of the requirements of this contract without the prior written approval of the SBA and the Contracting Officer.

(End of clause)

33. DFARS 252.219-7010 ALTERNATE A (JUN 1998)
[When Competitive 8(a) Contracting Procedures are used]

As prescribed in 219.811-3(2), substitute the following paragraph (c) for paragraph (c) of the clause at FAR 52.219-18:

(c) Any award resulting from this solicitation will be made directly by the Contracting Officer to the successful 8(a) offeror selected through the evaluation criteria set forth in this solicitation.

34. *FAR 52.222-1 NOTICE TO THE GOVERNMENT OF LABOR DISPUTES (FEB 1997)

If the Contractor has knowledge that any actual or potential labor dispute is delaying or threatens to delay the timely performance of this contract, the Contractor shall immediately give notice, including all relevant information, to the Contracting Officer. (End of clause)

35. *FAR 52.222-3

CONVICT LABOR (JUNE 2003)

(a) Except as provided in paragraph (b) of this clause, the Contractor shall not employ in the performance of this contract any person undergoing a sentence of imprisonment imposed by any court of a State, the District of Columbia, Puerto Rico, the Northern Mariana Islands, American Samoa, Guam, or the U.S. Virgin Islands.

(b) The Contractor is not prohibited from employing persons—

(1) On parole or probation to work at paid employment during the term of their sentence;

(2) Who have been pardoned or who have served their terms; or

(3) Confined for violation of the laws of any of the States, the District of Columbia, Puerto Rico, the Northern Mariana Islands, American Samoa, Guam, or the U.S. Virgin Islands who are authorized to work at paid employment in the community under the laws of such jurisdiction, if—

(i) The worker is paid or is in an approved work training program on a voluntary basis;

(ii) Representatives of local union central bodies or similar labor union organizations have been consulted;

(iii) Such paid employment will not result in the displacement of employed workers, or be applied in skills, crafts, or trades in which there is a surplus of available gainful labor in the locality, or impair existing contracts for services;

(iv) The rates of pay and other conditions of employment will not be less than those paid or provided for work of a similar nature in the locality in which the work is being performed; and

(v) The Attorney General of the United States has certified that the work-release laws or regulations of the jurisdiction involved are in conformity with the requirements of Executive Order 11755, as amended by Executive Orders 12608 and 12943. (End of clause)

36. *FAR 52.222-4

**CONTRACT WORK HOURS AND SAFETY STANDARDS ACT—
OVERTIME COMPENSATION (SEPT 2000)**

(a) *Overtime requirements.* No Contractor or subcontractor employing laborers or mechanics (see Federal Acquisition Regulation 22.300) shall require or permit them to work over 40 hours in any workweek unless they are paid at least 1 and 1/2 times the basic rate of pay for each hour worked over 40 hours.

(b) *Violation; liability for unpaid wages; liquidated damages.* The responsible Contractor and subcontractor are liable for unpaid wages if they violate the terms in paragraph (a) of this clause. In addition, the Contractor and subcontractor are liable for liquidated damages payable to the Government. The Contracting Officer will assess liquidated damages at the rate of \$10 per affected employee for each calendar day on which the employer required or permitted the employee to work in excess of the standard workweek of 40 hours without paying overtime wages required by the Contract Work Hours and Safety Standards Act.

(c) *Withholding for unpaid wages and liquidated damages.* The Contracting Officer will withhold from payments due under the contract sufficient funds required to satisfy any Contractor or subcontractor liabilities for unpaid wages and liquidated damages. If amounts withheld under the contract are insufficient to satisfy Contractor or subcontractor liabilities, the Contracting Officer will withhold payments from other Federal or Federally assisted contracts held by the same Contractor that are subject to the Contract Work Hours and Safety Standards Act.

(d) *Payrolls and basic records.* (1) The Contractor and its subcontractors shall maintain payrolls and basic payroll records for all laborers and mechanics working on the contract during the contract and shall make them available to the Government until 3 years after contract completion. The records shall contain the name and address of each employee, social security number, labor classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. The records need not duplicate those required for construction work by Department of Labor regulations at 29 CFR 5.5(a)(3) implementing the Davis-Bacon Act .

(2) The Contractor and its subcontractors shall allow authorized representatives of the Contracting Officer or the Department of Labor to inspect, copy, or transcribe records maintained under paragraph (d)(1) of this clause. The Contractor or subcontractor also shall allow authorized representatives of the Contracting Officer or Department of Labor to interview employees in the workplace during working hours.

(e) *Subcontracts.* The Contractor shall insert the provisions set forth in paragraphs (a) through (d) of this clause in subcontracts exceeding \$100,000 and require subcontractors to include these provisions in any lower-tier subcontracts. The Contractor shall be responsible for compliance by any subcontractor or lower-tier subcontractor with the provisions set forth in paragraphs (a) through (d) of this clause.
(End of clause)

(a) All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR Part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the Contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (d) of this clause; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such period. Such laborers and mechanics shall be paid not less than the appropriate wage rate and fringe benefits in the wage determination for the classification of work actually performed, without regard to skill, except as provided in the clause entitled Apprentices and Trainees. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein; provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classifications and wage rates conformed under paragraph (b) of this clause) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the Contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

(b) (1) The Contracting Officer shall require that any class of laborers or mechanics, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The Contracting Officer shall approve an additional classification and wage rate and fringe benefits therefor only when all the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination.

(ii) The classification is utilized in the area by the construction industry.

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the Contractor and laborers and mechanics to be employed in the classification (if known), or their representatives, and the Contracting Officer agree on the classification and wage rate (including the amount designated for fringe benefits, where appropriate), a report of the action taken shall be sent by the Contracting Officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator or an authorized representative will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the Contracting Officer or will notify the Contracting Officer within the 30-day period that additional time is necessary.

(3) In the event the Contractor, the laborers or mechanics to be employed in the classification, or their representatives, and the Contracting Officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the Contracting Officer shall refer the questions, including the views of all interested parties and the recommendation of the Contracting Officer, to the Administrator of the Wage and Hour Division for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the Contracting Officer or will notify the Contracting Officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits, where appropriate) determined pursuant to subparagraphs (b)(2) and (b)(3) of this clause shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(c) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the Contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(d) If the Contractor does not make payments to a trustee or other third person, the Contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program; provided, that the Secretary of Labor has found, upon the written request of the Contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of

Labor may require the Contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

38. *FAR 52.222-7

WITHHOLDING OF FUNDS (FEB 1988)

The Contracting Officer shall, upon his or her own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the Contractor under this contract or any other Federal contract with the same Prime Contractor, or any other Federally assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same Prime Contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the Contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the Contracting Officer may, after written notice to the Contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

39. *FAR 52.222-8

PAYROLLS AND BASIC RECORDS (FEB 1988)

(a) Payrolls and basic records relating thereto shall be maintained by the Contractor during the course of the work and preserved for a period of 3 years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made, and actual wages paid. Whenever the Secretary of Labor has found, under paragraph (d) of the clause entitled Davis-Bacon Act, that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the Contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(b) (1) The Contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the Contracting Officer. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under paragraph (a) of this clause. This information may be submitted in any form desired. Optional Form WH-347 (Federal Stock Number 029-005-00014-1) is available for this purpose and may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. The Prime Contractor is responsible for the submission of copies of payrolls by all subcontractors.

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the Contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify--

(i) That the payroll for the payroll period contains the information required to be maintained under paragraph (a) of this clause and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in the Regulations, 29 CFR Part 3; and

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by subparagraph (b)(2) of this clause.

(4) The falsification of any of the certifications in this clause may subject the Contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 3729 of Title 31 of the United States Code.

(c) The Contractor or subcontractor shall make the records required under paragraph (a) of this clause available for inspection, copying, or transcription by the Contracting Officer or authorized representatives of the Contracting Officer or the Department of Labor. The Contractor or subcontractor shall permit the Contracting Officer or representatives of the Contracting Officer or the Department of Labor to interview employees during working hours on the job. If the Contractor or subcontractor fails to submit required records or to make them available, the Contracting Officer may, after written notice to the Contractor, take such action as may be necessary to cause the suspension of any further payment. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

40. *FAR 52.222-9

APPRENTICES AND TRAINEES (FEB 1988)

(a) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State Apprenticeship Agency recognized by the Bureau, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the Contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated in this paragraph, shall be paid not less than the applicable wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a Contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the Contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Bureau of Apprenticeship and Training, or a State Apprenticeship Agency recognized by the Bureau, withdraws approval of an apprenticeship program, the Contractor will not longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(b) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed in the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the

corresponding journeyman wage rate in the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate in the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate in the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the Contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(c) Equal employment opportunity. The utilization of apprentices, trainees, and journeymen under this clause shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.

41. *FAR 52.222-10 COMPLIANCE WITH COPELAND ACT REQUIREMENTS (FEB 1988)

The Contractor shall comply with the requirements of 29 CFR Part 3, which are hereby incorporated by reference in this contract.

42. *FAR 52.222-11 SUBCONTRACTS (LABOR STANDARDS) (FEB 1988)

(a) The Contractor or subcontractor shall insert in any subcontracts the clauses entitled Davis-Bacon Act, Contract Work Hours and Safety Standards Act--Overtime Compensation, Apprentices and Trainees, Payrolls and Basic Records, Compliance with Copeland Act Requirements, Withholding of Funds, Subcontracts (Labor Standards), Contract Termination--Debarment, Disputes Concerning Labor Standards, Compliance with Davis-Bacon and Related Act Regulations, and Certification of Eligibility, and such other clauses as the Contracting Officer may, by appropriate instructions, require, and also a clause requiring subcontractors to include these clauses in any lower tier subcontracts. The Prime Contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with all the contract clauses cited in this paragraph.

(b) (1) Within 14 days after award of the contract, the Contractor shall deliver to the Contracting Officer a completed Statement and Acknowledgment Form (SF 1413) for each subcontract, including the subcontractor's signed and dated acknowledgment that the clauses set forth in paragraph (a) of this clause have been included in the subcontract.

(2) Within 14 days after the award of any subsequently awarded subcontract the Contractor shall deliver to the Contracting Officer an updated completed SF 1413 for such additional subcontract.

43. *FAR 52.222-12 CONTRACT TERMINATION--DEBARMENT (FEB 1988)

A breach of the contract clauses entitled Davis-Bacon Act, Contract Work Hours and Safety Standards Act--Overtime Compensation, Apprentices and Trainees, Payrolls and Basic Records, Compliance with Copeland Act Requirements, Subcontracts (Labor Standards), Compliance with Davis-Bacon and Related Act Regulations, or Certification of Eligibility may be grounds for termination of the contract, and for debarment as a Contractor and subcontractor as provided in 29 CFR 5.12.

44. *FAR 52.222-13 COMPLIANCE WITH DAVIS-BACON AND RELATED ACT REGULATIONS (FEB 1988)

All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR Parts 1, 3, and 5 are hereby incorporated by reference in this contract.

45. *FAR 52.222-14 DISPUTES CONCERNING LABOR STANDARDS (FEB 1988)

The United States Department of Labor has set forth in 29 CFR Parts 5, 6, and 7 procedures for resolving disputes concerning labor standards requirements. Such disputes shall be resolved in accordance with those procedures and not the Disputes clause of this contract. Disputes within the meaning of this clause include disputes between the Contractor (or any of its subcontractors) and the contracting agency the U.S. Department of Labor, or the employees of their representatives.

46. *FAR 52.222-15 CERTIFICATION OF ELIGIBILITY (FEB 1988)

(a) By entering into this contract, the Contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the Contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(b) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(c) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

47. *FAR 52.222-26 EQUAL OPPORTUNITY (APR 2002)

(a) *Definition.* "United States," as used in this clause, means the 50 States, the District of Columbia, Puerto Rico, the Northern Mariana Islands, American Samoa, Guam, the U.S. Virgin Islands, and Wake Island.

(b) If, during any 12-month period (including the 12 months preceding the award of this contract), the Contractor has been or is awarded nonexempt Federal contracts and/or subcontracts that have an aggregate value in excess of \$10,000, the Contractor shall comply with paragraphs (b)(1) through (b)(11) of this clause, except for work performed outside the United States by employees who were not recruited within the United States. Upon request, the Contractor shall provide information necessary to determine the applicability of this clause.

(1) The Contractor shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. However, it shall not be a violation of this clause for the Contractor to extend a publicly announced preference in employment to Indians living on or near an Indian reservation, in connection with employment opportunities on or near an Indian reservation, as permitted by 41 CFR 60-1.5.

(2) The Contractor shall take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. This shall include, but not be limited to—

- (i) Employment;
- (ii) Upgrading;
- (iii) Demotion;
- (iv) Transfer;
- (v) Recruitment or recruitment advertising;
- (vi) Layoff or termination;
- (vii) Rates of pay or other forms of compensation; and
- (viii) Selection for training, including apprenticeship.

(3) The Contractor shall post in conspicuous places available to employees and applicants for employment the notices to be provided by the Contracting Officer that explain this clause.

(4) The Contractor shall, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.

(5) The Contractor shall send, to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, the notice to be provided by the Contracting Officer advising the labor union or workers' representative of the Contractor's commitments under this clause, and post copies of the notice in conspicuous places available to employees and applicants for employment.

(6) The Contractor shall comply with Executive Order 11246, as amended, and the rules, regulations, and orders of the Secretary of Labor.

(7) The Contractor shall furnish to the contracting agency all information required by Executive Order 11246, as amended, and by the rules, regulations, and orders of the Secretary of Labor. The Contractor shall also file Standard Form 100 (EEO-1), or any successor form, as prescribed in 41 CFR part 60-1. Unless the Contractor has filed within the 12 months preceding the date of contract award, the Contractor shall, within 30 days after contract award, apply to either the regional Office of Federal Contract Compliance Programs (OFCCP) or the local office of the Equal Employment Opportunity Commission for the necessary forms.

(8) The Contractor shall permit access to its premises, during normal business hours, by the contracting agency or the OFCCP for the purpose of conducting on-site compliance evaluations and complaint investigations. The Contractor shall permit the Government to inspect and copy any books, accounts, records (including computerized records), and other material that may be relevant to the matter under investigation and pertinent to compliance with Executive Order 11246, as amended, and rules and regulations that implement the Executive Order.

(9) If the OFCCP determines that the Contractor is not in compliance with this clause or any rule, regulation, or order of the Secretary of Labor, this contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts, under the procedures authorized in Executive Order 11246, as amended. In addition, sanctions may be imposed and remedies invoked against the Contractor as provided in Executive Order 11246, as amended; in the rules, regulations, and orders of the Secretary of Labor; or as otherwise provided by law.

(10) The Contractor shall include the terms and conditions of paragraphs (b)(1) through (11) of this clause in every subcontract or purchase order that is not exempted by the rules, regulations, or orders of the Secretary of Labor issued under Executive Order 11246, as amended, so that these terms and conditions will be binding upon each subcontractor or vendor.

(11) The Contractor shall take such action with respect to any subcontract or purchase order as the Contracting Officer may direct as a means of enforcing these terms and conditions, including sanctions for noncompliance, provided, that if the Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of any direction, the Contractor may request the United States to enter into the litigation to protect the interests of the United States.

(c) Notwithstanding any other clause in this contract, disputes relative to this clause will be governed by the procedures in 41 CFR 60-1.1.

(End of clause)

48. *FAR 52.222-27 AFFIRMATIVE ACTION COMPLIANCE REQUIREMENTS FOR CONSTRUCTION (FEB 1999)

(a) Definitions.

"Covered area," as used in this clause, means the geographical area described in the solicitation for this contract.

"Deputy Assistant Secretary," as used in this clause, means the Deputy Assistant Secretary for Federal Contract Compliance, U.S. Department of Labor, or a designee

"Employer's identification number," as used in this clause, means the Federal Social Security number used on the employer's quarterly Federal tax return, U.S. Treasury Department Form 941.

"Minority," as used in this clause, means--

(1) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

(2) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands);

(3) Black (all persons having origins in any of the black African racial groups not of Hispanic origin); and

(4) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race).

(b) If the Contractor, or a subcontractor at any tier, subcontracts a portion of the work involving any construction trade each such subcontract in excess of \$10,000 shall include this clause and the Notice containing the goals for minority and female participation stated in the solicitation for this contract.

(c) If the Contractor is participating in a Hometown Plan (41 CFR 60-4) approved by the U.S. Department of Labor in a covered area, either individually or through an association, its affirmative action obligations on all work in the plan area (including goals) shall comply with the plan for those trades that have unions participating in the plan. Contractors must be able to demonstrate participation in, and compliance with, the provisions of the plan. Each Contractor or subcontractor participating in an approved plan is also required to comply with its obligations under the Equal Opportunity clause, and to make a good faith effort to achieve each goal under the plan in each trade in which it has employees. The overall good-faith performance by other Contractors or subcontractors toward a goal in an approved plan does not excuse any Contractor's or subcontractor's failure to make good-faith efforts to achieve the plan's goals.

(d) The Contractor shall implement the affirmative action procedures in subparagraphs (g)(1) through (16) of this clause. The goals stated in the solicitation for this contract are expressed as percentages of the total hours of employment and training of minority and female utilization that the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for the geographical area where that work is actually performed. The Contractor is expected to make substantially uniform progress toward its goals in each craft.

(e) Neither the terms and conditions of any collective bargaining agreement, nor the failure by a union with which the Contractor has a collective bargaining agreement, to refer minorities or women shall excuse the Contractor's obligations under this clause, Executive Order 11246, as amended, or the regulations thereunder.

(f) In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.

(g) The Contractor shall take affirmative action to ensure equal employment opportunity. The evaluation of the Contractor's compliance with this clause shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully and implement affirmative action steps at least as extensive as the following:

(1) Ensure a working environment free of harassment, intimidation, and coercion at all sites and in all facilities where the Contractor's employees are assigned to work. The Contractor, if possible, will assign two or more women to each construction project. The Contractor shall ensure that foremen, superintendents, and other onsite supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at these sites or facilities.

(2) Establish and maintain a current list of sources for minority and female recruitment. Provide written notification to minority and female recruitment sources and community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.

(3) Establish and maintain a current file of the names, addresses, and telephone numbers of each minority and female off-the-street applicant, referrals of minorities or females from unions, recruitment sources, or community organizations, and the action taken with respect to each individual. If an individual was sent to the union hiring hall for referral and not referred back to the Contractor by the union or, if referred back, not employed by the Contractor, this shall be documented in the file, along with whatever additional actions the Contractor may have taken.

(4) Immediately notify the Deputy Assistant Secretary when the union or unions with which the Contractor has a collective bargaining agreement has not referred back to the Contractor a minority or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.

(5) Develop on-the-job training opportunities and/or participate in training programs for the area that expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the

Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under subparagraph (g)(2) of this clause.

- (6) Disseminate the Contractor's equal employment policy by--
 - (i) Providing notice of the policy to unions and to training, recruitment, and outreach programs, and requesting their cooperation in assisting the Contractor in meeting its contract obligations;
 - (ii) Including the policy in any policy manual and in collective bargaining agreements;
 - (iii) Publicizing the policy in the company newspaper, annual report, etc.;
 - (iv) Reviewing the policy with all management personnel and with all minority and female employees at least once a year; and
 - (v) Posting the policy on bulletin boards accessible to employees at each location where construction work is performed.
- (7) Review, at least annually, the Contractor's equal employment policy and affirmative action obligations with all employees having responsibility for hiring, assignment, layoff, termination, or other employment decisions. Conduct review of this policy with all on-site supervisory personnel before initiating construction work at a job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.
- (8) Disseminate the Contractor's equal employment policy externally by including it in any advertising in the news media, specifically including minority and female news media. Provide written notification to, and discuss this policy with, other Contractors and subcontractors with which the Contractor does or anticipates doing business.
- (9) Direct recruitment efforts, both oral and written, to minority, female, and community organizations, to schools with minority and female students, and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than 1 month before the date for acceptance of applications for apprenticeship or training by any recruitment source, send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.
- (10) Encourage present minority and female employees to recruit minority persons and women. Where reasonable, provide after-school, summer, and vacation employment to minority and female youth both on the site and in other areas of the Contractor's workforce.
- (11) Validate all tests and other selection requirements where required under 41 CFR 60-3.
- (12) Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities. Encourage these employees to seek or to prepare for, through appropriate training, etc., opportunities for promotion.
- (13) Ensure that seniority practices job classifications, work assignments, and other personnel practices do not have a discriminatory effect by continually monitoring all personnel and employment-related activities to ensure that the Contractor's obligations under this contract are being carried out.
- (14) Ensure that all facilities and company activities are nonsegregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.
- (15) Maintain a record of solicitations for subcontracts for minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.
- (16) Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's equal employment policy and affirmative action obligations.
- (h) The Contractor is encouraged to participate in voluntary associations that may assist in fulfilling one or more of the affirmative action obligations contained in subparagraphs (g)(1) through (16) of this clause. The efforts of a contractor association, joint contractor-union, contractor-community, or similar group of which the contractor is a member and participant may be asserted as fulfilling one or more of its obligations under subparagraphs (g)(1) through (16) of this clause, provided the Contractor--
 - (1) Actively participates in the group;
 - (2) Makes every effort to ensure that the group has a positive impact on the employment of minorities and women in the industry;
 - (3) Ensures that concrete benefits of the program are reflected in the Contractor's minority and female workforce participation;

- (4) Makes a good-faith effort to meet its individual goals and timetables; and
- (5) Can provide access to documentation that demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply is the Contractor's, and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.
- (i) A single goal for minorities and a separate single goal for women shall be established. The Contractor is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and nonminority. Consequently, the Contractor may be in violation of Executive Order 11246, as amended, if a particular group is employed in a substantially disparate manner.
- (j) The Contractor shall not use goals or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.
- (k) The Contractor shall not enter into any subcontract with any person or firm debarred from Government contracts under Executive Order 11246, as amended.
- (l) The Contractor shall carry out such sanctions and penalties for violation of this clause and of the Equal Opportunity clause, including suspension, termination, and cancellation of existing subcontracts, as may be imposed or ordered under Executive Order 11246, as amended, and its implementing regulations, by the OFCCP. Any failure to carry out these sanctions and penalties as ordered shall be a violation of this clause and Executive Order 11246, as amended.
- (m) The Contractor in fulfilling its obligations under this clause shall implement affirmative action procedures at least as extensive as those prescribed in paragraph (g) of this clause, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of Executive Order 11246, as amended, the implementing regulations, or this clause, the Deputy Assistant Secretary shall take action as prescribed in 41 CFR 60-4.8.
- (n) The Contractor shall designate a responsible official to--
 - (1) Monitor all employment-related activity to ensure that the Contractor's equal employment policy is being carried out;
 - (2) Submit reports as may be required by the Government; and
 - (3) Keep records that shall at least include for each employee the name, address, telephone number, construction trade, union affiliation (if any), employee identification number, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, separate records are not required to be maintained.
- (o) Nothing contained herein shall be construed as a limitation upon the application of other laws that establish different standards of compliance or upon the requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

49. *FAR 52.222-35 EQUAL OPPORTUNITY FOR SPECIAL DISABLED VETERANS, VETERANS OF THE VIETNAM ERA, AND OTHER ELIGIBLE VETERANS (DEC 2001)

- (a) *Definitions.* As used in this clause—
 - “All employment openings” means all positions except executive and top management, those positions that will be filled from within the Contractor's organization, and positions lasting 3 days or less. This term includes full-time employment, temporary employment of more than 3 days duration, and part-time employment.
 - “Executive and top management” means any employee—
 - (1) Whose primary duty consists of the management of the enterprise in which the individual is employed or of a customarily recognized department or subdivision thereof;
 - (2) Who customarily and regularly directs the work of two or more other employees;
 - (3) Who has the authority to hire or fire other employees or whose suggestions and recommendations as to the hiring or firing and as to the advancement and promotion or any other change of status of other employees will be given particular weight;
 - (4) Who customarily and regularly exercises discretionary powers; and

(5) Who does not devote more than 20 percent or, in the case of an employee of a retail or service establishment, who does not devote more than 40 percent of total hours of work in the work week to activities that are not directly and closely related to the performance of the work described in paragraphs (1) through (4) of this definition. This paragraph (5) does not apply in the case of an employee who is in sole charge of an establishment or a physically separated branch establishment, or who owns at least a 20 percent interest in the enterprise in which the individual is employed.

“Other eligible veteran” means any other veteran who served on active duty during a war or in a campaign or expedition for which a campaign badge has been authorized.

“Positions that will be filled from within the Contractor's organization” means employment openings for which the Contractor will give no consideration to persons outside the Contractor's organization (including any affiliates, subsidiaries, and parent companies) and includes any openings the Contractor proposes to fill from regularly established “recall” lists. The exception does not apply to a particular opening once an employer decides to consider applicants outside of its organization.

“Qualified special disabled veteran” means a special disabled veteran who satisfies the requisite skill, experience, education, and other job-related requirements of the employment position such veteran holds or desires, and who, with or without reasonable accommodation, can perform the essential functions of such position.

“Special disabled veteran” means—

(1) A veteran who is entitled to compensation (or who but for the receipt of military retired pay would be entitled to compensation) under laws administered by the Department of Veterans Affairs for a disability—

(i) Rated at 30 percent or more; or

(ii) Rated at 10 or 20 percent in the case of a veteran who has been determined under 38 U.S.C. 3106 to have a serious employment handicap (*i.e.*, a significant impairment of the veteran's ability to prepare for, obtain, or retain employment consistent with the veteran's abilities, aptitudes, and interests); or

(2) A person who was discharged or released from active duty because of a service-connected disability.

“Veteran of the Vietnam era” means a person who—

(1) Served on active duty for a period of more than 180 days and was discharged or released from active duty with other than a dishonorable discharge, if any part of such active duty occurred—

(i) In the Republic of Vietnam between February 28, 1961, and May 7, 1975; or

(ii) Between August 5, 1964, and May 7, 1975, in all other cases; or

(2) Was discharged or released from active duty for a service-connected disability if any part of the active duty was performed—

(i) In the Republic of Vietnam between February 28, 1961, and May 7, 1975; or

(ii) Between August 5, 1964, and May 7, 1975, in all other cases.

(b) *General.* (1) The Contractor shall not discriminate against the individual because the individual is a special disabled veteran, a veteran of the Vietnam era, or other eligible veteran, regarding any position for which the employee or applicant for employment is qualified. The Contractor shall take affirmative action to employ, advance in employment, and otherwise treat qualified special disabled veterans, veterans of the Vietnam era, and other eligible veterans without discrimination based upon their disability or veterans' status in all employment practices such as—

(i) Recruitment, advertising, and job application procedures;

(ii) Hiring, upgrading, promotion, award of tenure, demotion, transfer, layoff, termination, right of return from layoff and rehiring;

(iii) Rate of pay or any other form of compensation and changes in compensation;

(iv) Job assignments, job classifications, organizational structures, position descriptions, lines of progression, and seniority lists;

(v) Leaves of absence, sick leave, or any other leave;

(vi) Fringe benefits available by virtue of employment, whether or not administered by the Contractor;

(vii) Selection and financial support for training, including apprenticeship, and on-the-job training under 38 U.S.C. 3687, professional meetings, conferences, and other related activities, and selection for leaves of absence to pursue training;

(viii) Activities sponsored by the Contractor including social or recreational programs;

and

(ix) Any other term, condition, or privilege of employment.

(2) The Contractor shall comply with the rules, regulations, and relevant orders of the Secretary of Labor issued under the Vietnam Era Veterans' Readjustment Assistance Act of 1972 (the Act), as amended (38 U.S.C. 4211 and 4212).

(c) *Listing openings.* (1) The Contractor shall immediately list all employment openings that exist at the time of the execution of this contract and those which occur during the performance of this contract, including those not generated by this contract, and including those occurring at an establishment of the Contractor other than the one where the contract is being performed, but excluding those of independently operated corporate affiliates, at an appropriate local public employment service office of the State wherein the opening occurs. Listing employment openings with the U.S. Department of Labor's America's Job Bank shall satisfy the requirement to list jobs with the local employment service office.

(2) The Contractor shall make the listing of employment openings with the local employment service office at least concurrently with using any other recruitment source or effort and shall involve the normal obligations of placing a bona fide job order, including accepting referrals of veterans and nonveterans. This listing of employment openings does not require hiring any particular job applicant or hiring from any particular group of job applicants and is not intended to relieve the Contractor from any requirements of Executive orders or regulations concerning nondiscrimination in employment.

(3) Whenever the Contractor becomes contractually bound to the listing terms of this clause, it shall advise the State public employment agency in each State where it has establishments of the name and location of each hiring location in the State. As long as the Contractor is contractually bound to these terms and has so advised the State agency, it need not advise the State agency of subsequent contracts. The Contractor may advise the State agency when it is no longer bound by this contract clause.

(d) *Applicability.* This clause does not apply to the listing of employment openings that occur and are filled outside the 50 States, the District of Columbia, the Commonwealth of Puerto Rico, the Commonwealth of the Northern Mariana Islands, American Samoa, Guam, the Virgin Islands of the United States, and Wake Island.

(e) *Postings.* (1) The Contractor shall post employment notices in conspicuous places that are available to employees and applicants for employment.

(2) The employment notices shall—

(i) State the rights of applicants and employees as well as the Contractor's obligation under the law to take affirmative action to employ and advance in employment qualified employees and applicants who are special disabled veterans, veterans of the Vietnam era, and other eligible veterans; and

(ii) Be in a form prescribed by the Deputy Assistant Secretary for Federal Contract Compliance Programs, Department of Labor (Deputy Assistant Secretary of Labor), and provided by or through the Contracting Officer.

(3) The Contractor shall ensure that applicants or employees who are special disabled veterans are informed of the contents of the notice (e.g., the Contractor may have the notice read to a visually disabled veteran, or may lower the posted notice so that it can be read by a person in a wheelchair).

(4) The Contractor shall notify each labor union or representative of workers with which it has a collective bargaining agreement, or other contract understanding, that the Contractor is bound by the terms of the Act and is committed to take affirmative action to employ, and advance in employment, qualified special disabled veterans, veterans of the Vietnam era, and other eligible veterans.

(f) *Noncompliance.* If the Contractor does not comply with the requirements of this clause, the Government may take appropriate actions under the rules, regulations, and relevant orders of the Secretary of Labor issued pursuant to the Act.

(g) *Subcontracts.* The Contractor shall insert the terms of this clause in all subcontracts or purchase orders of \$25,000 or more unless exempted by rules, regulations, or orders of the Secretary of Labor. The Contractor shall act as specified by the Deputy Assistant Secretary of Labor to enforce the terms, including action for noncompliance.

(End of clause)

50. *FAR 52.222-36 AFFIRMATIVE ACTION FOR WORKERS WITH DISABILITIES (JUN 1998)

(a) General.

(1) Regarding any position for which the employee or applicant for employment is qualified, the Contractor shall not discriminate against any employee or applicant because of physical or mental disability. The Contractor agrees to take affirmative action to employ, advance in employment, and otherwise treat qualified individuals with disabilities without discrimination based upon their physical or mental disability in all employment practices such as--

- (i) Recruitment, advertising, and job application procedures;
- (ii) Hiring, upgrading, promotion, award of tenure, demotion, transfer, layoff, termination, right of return from layoff, and rehiring;
- (iii) Rates of pay or other forms of compensation and changes in compensation;
- (iv) Job assignments, job classifications, organizational structures, position descriptions, lines of progression, and seniority lists;
- (v) Leaves of absence, sick leave, or any other leave;
- (vi) Fringe benefits available by virtue of employment, whether or not administered by the Contractor;
- (vii) Selection and financial support for training, including apprenticeships, professional meetings, conferences, and other related activities, and selection for leaves of absence to pursue training;
- (viii) Activities sponsored by the Contractor, including social or recreational programs; and
- (ix) Any other term, condition, or privilege of employment.

(2) The Contractor agrees to comply with the rules, regulations, and relevant orders of the Secretary of Labor (Secretary) issued under the Rehabilitation Act of 1973 (29 U.S.C. 793) (the Act), as amended.

(b) Postings.

- (1) The Contractor agrees to post employment notices stating--
 - (i) The Contractor's obligation under the law to take affirmative action to employ and advance in employment qualified individuals with disabilities; and
 - (ii) The rights of applicants and employees.
- (2) These notices shall be posted in conspicuous places that are available to employees and applicants for employment. The Contractor shall ensure that applicants and employees with disabilities are informed of the contents of the notice (e.g., the Contractor may have the notice read to visually disabled individual, or may lower the posted notice so that it might be read by a person in a wheelchair). The notices shall be in a form prescribed by the Deputy Assistant Secretary for Federal Contract Compliance of the U.S. Department of Labor (Deputy Assistant Secretary) and shall be provided by or through the Contracting Officer.
- (3) The Contractor shall notify each labor union or representative of workers with which it has a collective bargaining agreement or other contract understanding, that the Contractor is bound by the terms of Section 503 of the Act and is committed to take affirmative action to employ, and advance in employment, qualified individuals with physical or mental disabilities.
- (c) Noncompliance. If the Contractor does not comply with the requirements of this clause, appropriate actions may be taken under the rules, regulations, and relevant orders of the Secretary issued pursuant to the Act.
- (b) Subcontracts. The Contractor shall include the terms of this clause in every subcontract or purchase order in excess of \$10,000 unless exempted by rules, regulations, or orders of the Secretary. The Contractor shall act as specified by the Deputy Assistant Secretary to enforce the terms, including action for noncompliance.

51. *FAR 52.222-37 EMPLOYMENT REPORTS ON SPECIAL DISABLED VETERANS, VETERANS OF THE VIETNAM ERA, AND OTHER ELIGIBLE VETERANS (DEC 2001)

(a) Unless the Contractor is a State or local government agency, the Contractor shall report at least annually, as required by the Secretary of Labor, on—

(1) The number of special disabled veterans, the number of veterans of the Vietnam era, and other eligible veterans in the workforce of the Contractor by job category and hiring location; and

(2) The total number of new employees hired during the period covered by the report, and of the total, the number of special disabled veterans, the number of veterans of the Vietnam era, and the number of other eligible veterans; and

(3) The maximum number and the minimum number of employees of the Contractor during the period covered by the report.

(b) The Contractor shall report the above items by completing the Form VETS-100, entitled "Federal Contractor Veterans' Employment Report (VETS-100 Report)".

(c) The Contractor shall submit VETS-100 Reports no later than September 30 of each year beginning September 30, 1988.

(d) The employment activity report required by paragraph (a)(2) of this clause shall reflect total hires during the most recent 12-month period as of the ending date selected for the employment profile report required by paragraph (a)(1) of this clause. Contractors may select an ending date—

(1) As of the end of any pay period between July 1 and August 31 of the year the report is due; or

(2) As of December 31, if the Contractor has prior written approval from the Equal Employment Opportunity Commission to do so for purposes of submitting the Employer Information Report EEO-1 (Standard Form 100).

(e) The Contractor shall base the count of veterans reported according to paragraph (a) of this clause on voluntary disclosure. Each Contractor subject to the reporting requirements at 38 U.S.C. 4212 shall invite all special disabled veterans, veterans of the Vietnam era, and other eligible veterans who wish to benefit under the affirmative action program at 38 U.S.C. 4212 to identify themselves to the Contractor. The invitation shall state that—

(1) The information is voluntarily provided;

(2) The information will be kept confidential;

(3) Disclosure or refusal to provide the information will not subject the applicant or employee to any adverse treatment; and

(4) The information will be used only in accordance with the regulations promulgated under 38 U.S.C. 4212.

(f) The Contractor shall insert the terms of this clause in all subcontracts or purchase orders of \$25,000 or more unless exempted by rules, regulations, or orders of the Secretary of Labor.

(End of clause)

52. *FAR 52.222-38 COMPLIANCE WITH VETERANS' EMPLOYMENT REPORTING REQUIREMENTS (DEC 2001)

By submission of its offer, the offeror represents that, if it is subject to the reporting requirements of 38 U.S.C. 4212(d) (*i.e.*, if it has any contract containing Federal Acquisition Regulation clause 52.222-37, Employment Reports on Special Disabled Veterans, Veterans of the Vietnam Era, and Other Eligible Veterans), it has submitted the most recent VETS-100 Report required by that clause.

(End of provision)

53. *FAR 52.223-3 HAZARDOUS MATERIAL IDENTIFICATION AND MATERIAL SAFETY DATA (JAN 1997)

(a) "Hazardous material," as used in this clause, includes any material defined as hazardous under the latest version of Federal Standard No. 313 (including revisions adopted during the term of the contract).

(b) The offeror must list any hazardous material, as defined in paragraph (a) of this clause, to be delivered under this contract. The hazardous material shall be properly identified and include any applicable identification number, such as National Stock Number or Special Item Number. This information shall also be included on the Material Safety Data Sheet submitted under this contract.

Material

Identification No.

(If none, insert "None")

_____	_____
_____	_____
_____	_____

(c) This list must be updated during performance of the contract whenever the Contractor determines that any other material to be delivered under this contract is hazardous.

(d) The apparently successful offeror agrees to submit, for each item as required prior to award, a Material Safety Data Sheet, meeting the requirements of 29 CFR 1910.1200(g) and the latest version of Federal Standard No. 313, for all hazardous material identified in paragraph (b) of this clause. Data shall be submitted in accordance with Federal Standard No. 313, whether or not the apparently successful offeror is the actual manufacturer of these items. Failure to submit the Material Safety Data Sheet prior to award may result in the apparently successful offeror being considered nonresponsible and ineligible for award.

(e) If, after award, there is a change in the composition of the item(s) or a revision to Federal Standard No. 313, which renders incomplete or inaccurate the data submitted under paragraph (d) of this clause, the Contractor shall promptly notify the Contracting Officer and resubmit the data.

(f) Neither the requirements of this clause nor any act or failure to act by the Government shall relieve the Contractor of any responsibility or liability for the safety of Government, Contractor, or subcontractor personnel or property.

(g) Nothing contained in this clause shall relieve the Contractor from complying with applicable Federal, State, and local laws, codes, ordinances, and regulations (including the obtaining of licenses and permits) in connection with hazardous material.

(h) The Government's rights in data furnished under this contract with respect to hazardous material are as follows:

(1) To use, duplicate and disclose any data to which this clause is applicable. The purposes of this right are to--

- (i) Apprise personnel of the hazards to which they may be exposed in using, handling, packaging, transporting, or disposing of hazardous materials;
- (ii) Obtain medical treatment for those affected by the material; and
- (iii) Have others use, duplicate, and disclose the data for the Government for these purposes.

(2) To use, duplicate, and disclose data furnished under this clause, in accordance with subparagraph (h)(1) of this clause, in precedence over any other clause of this contract providing for rights in data.

(3) The Government is not precluded from using similar or identical data acquired from other sources. (End of clause)

54. *FAR 52.223-5 POLLUTION PREVENTION AND RIGHT-TO-KNOW INFORMATION (APR 1998) [For Work on Federal Facilities]

(a) Executive Order 12856 of August 3, 1993, requires Federal facilities to comply with the provisions of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) (42 U.S.C. 11001-11050) and the Pollution Prevention Act of 1990 (PPA) (42 U.S.C. 13101-13109).

(b) The Contractor shall provide all information needed by the Federal facility to comply with the emergency planning reporting requirements of Section 302 of EPCRA; the emergency notice requirements of Section 304 of EPCRA; the list of Material Safety Data Sheets required by Section 311 of EPCRA; the emergency and hazardous chemical inventory forms of Section 312 of EPCRA; the toxic chemical release inventory of Section 313 of EPCRA, which includes the reduction and recycling information required by Section 6607 of PPA; and the toxic chemical reduction goals requirements of Section 3-302 of Executive Order 12856.

55. *FAR 52.223-6 DRUG-FREE WORKPLACE (MAY 2001)

(a) Definitions. As used in this clause--

"Controlled substance" means a controlled substance in schedules I through V of section 202 of the Controlled Substances Act (21 U.S.C. 812) and as further defined in regulation at 21 CFR 1308.11 - 1308.15.

"Conviction" means a finding of guilt (including a plea of nolo contendere) or imposition of sentence, or both, by any judicial body charged with the responsibility to determine violations of the Federal or State criminal drug statutes.

"Criminal drug statute" means a Federal or non-Federal criminal statute involving the manufacture, distribution, dispensing, possession or use of any controlled substance.

"Drug-free workplace" means the site(s) for the performance of work done by the Contractor in connection with a specific contract where employees of the Contractor are prohibited from engaging in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance.

"Employee" means an employee of a Contractor directly engaged in the performance of work under a Government contract. "Directly engaged" is defined to include all direct cost employees and any other Contractor employee who has other than a minimal impact or involvement in contract performance.

"Individual" means an offeror/contractor that has no more than one employee including the offeror/contractor.

(b) The Contractor, if other than an individual, shall--within 30 days after award (unless a longer period is agreed to in writing for contracts of 30 days or more performance duration), or as soon as possible for contracts of less than 30 days performance duration--

(1) Publish a statement notifying its employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the Contractor's workplace and specifying the actions that will be taken against employees for violations of such prohibition;

(2) Establish an ongoing drug-free awareness program to inform such employees about--

(i) The dangers of drug abuse in the workplace;

(ii) The Contractor's policy of maintaining a drug-free workplace;

(iii) Any available drug counseling, rehabilitation, and employee assistance

programs; and

(iv) The penalties that may be imposed upon employees for drug abuse violations

occurring in the workplace.

(3) Provide all employees engaged in performance of the contract with a copy of the statement required by subparagraph (b)(1) of this clause;

(4) Notify such employees in writing in the statement required by subparagraph (b)(1) of this clause that, as a condition of continued employment on this contract, the employee will--

(i) Abide by the terms of the statement; and

(ii) Notify the employer in writing of the employee's conviction under a criminal drug statute for a violation occurring in the workplace no later than 5 days after such conviction.

(5) Notify the Contracting Officer in writing within 10 days after receiving notice under subdivision (b)(4)(ii) of this clause, from an employee or otherwise receiving actual notice of such conviction. The notice shall include the position title of the employee;

(6) Within 30 days after receiving notice under subdivision (b)(4)(ii) of this clause of a conviction, take one of the following actions with respect to any employee who is convicted of a drug abuse violation occurring in the workplace:

(i) Taking appropriate personnel action against such employee, up to and including termination; or

(ii) Require such employee to satisfactorily participate in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency; and

(7) Make a good faith effort to maintain a drug-free workplace through implementation of subparagraphs (b)(1) through (b)(6) of this clause.

(c) The Contractor, if an individual, agrees by award of the contract or acceptance of a purchase order, not to engage in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance while performing this contract.

(d) In addition to other remedies available to the Government, the Contractor's failure to comply with the requirements of paragraph (b) or (c) of this clause may, pursuant to FAR 23.560, render the Contractor subject to suspension of contract payments, termination of the contract for default, and suspension or debarment.

56. FAR 52.223-9 ESTIMATE OF PERCENTAGE OF RECOVERED MATERIAL CONTENT FOR EPA-DESIGNATED PRODUCTS (AUG 2000) [For Contracts exceeding \$100,000. EPA Designated product (available at <http://www.epa.gov/cpg/>)]

(a) Definitions. As used in this clause—

“Postconsumer material” means a material or finished product that has served its intended use and has been discarded for disposal or recovery, having completed its life as a consumer item. Postconsumer material is a part of the broader category of “recovered material.”

“Recovered material” means waste materials and by-products recovered or diverted from solid waste, but the term does not include those materials and by-products generated from, and commonly reused within, an original manufacturing process.

(b) The Contractor, on completion of this contract, shall—

(1) Estimate the percentage of the total recovered material used in contract performance, including, if applicable, the percentage of postconsumer material content; and

(2) Submit this estimate to the Contracting Officer.

(End of clause)

**57. *FAR 52.223-14 TOXIC CHEMICAL RELEASE REPORTING (JUNE 2003)
[For Contracts Over \$100,000]**

(a) Unless otherwise exempt, the Contractor, as owner or operator of a facility used in the performance of this contract, shall file by July 1 for the prior calendar year an annual Toxic Chemical Release Inventory Form (Form R) as described in sections 313(a) and (g) of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) (42 U.S.C. 11023(a) and (g)), and section 6607 of the Pollution Prevention Act of 1990 (PPA) (42 U.S.C. 13106). The Contractor shall file, for each facility subject to the Form R filing and reporting requirements, the annual Form R throughout the life of the contract.

(b) A Contractor-owned or -operated facility use in the performance of this contract is exempt from the requirement to file an annual Form R if--

(1) The facility does not manufacture, process or otherwise use any toxic chemicals listed under section 313(c) of EPCRA, 42 U.S.C. 11023(c);

(2) The facility does not have 10 or more full-time employees as specified in section 313(b)(1)(A) of EPCRA, 42 U.S.C. 11023(b)(1)(A);

(3) The facility does not meet the reporting thresholds of toxic chemicals established under section 313(f) of EPCRA, 42 U.S.C. 11023(f) (including the alternate thresholds at 40 CFR 372.27, provided an appropriate certification form has been filed with EPA);

(4) The facility does not fall within Standard Industrial Classification Code (SIC) major groups 20 through 39 or their corresponding North American Industry Classification System (NAICS) sectors 31 through 33; or

(5) The facility is not located in the United States or its outlying areas.

(c) If the Contractor has certified to an exemption in accordance with one or more of the criteria in paragraph (b) of this clause, and after award of the contract circumstances change so that any one of its owned or operated facilities used in the performance of this contract is no longer exempt-

(1) The Contractor shall notify the Contracting Officer;

and

(2) The Contractor, as owner or operator of a facility used in the performance of this contract is no longer exempt, shall (i) submit a Toxic Chemical Release Inventory Form (Form R) on or before July 1 for the prior calendar year during which the facility becomes eligible; and (ii) continue to file the annual Form R for the life of the contract for such facility.

(d) The Contracting Officer may terminate this contract or take other action as appropriate, if the Contractor fails to comply accurately and fully with the EPCRA and PPA toxic chemical release filing and reporting requirements.

(e) Except for acquisitions of commercial items, as defined in FAR Part 2, the Contractor shall-

(1) For competitive subcontracts expected to exceed \$100,000 (including all options), include a solicitation provision substantially the same as the provision at FAR 52.223-13, Certification of Toxic Chemical Release Reporting; and

(2) Include in any resultant subcontract exceeding \$100,000 (including all options), the substance of this clause, except this paragraph (e).

58. DFARS 252.223-7006 PROHIBITION ON STORAGE AND DISPOSAL OF TOXIC AND HAZARDOUS MATERIALS (APR 1993)

(a) Definitions. As used in this clause--

(1) "Storage" means a non-transitory, semi-permanent or permanent holding, placement, or leaving of material. It does not include a temporary accumulation of a limited quantity of a material used in or a waste generated or resulting from authorized activities, such as servicing, maintenance, or repair of Department of Defense (DoD) items, equipment, or facilities.

(2) "Toxic or hazardous materials" means:

(i) Materials referred to in section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 (42 U.S.C. 9601(14)) and materials designated under section 102 of CERCLA (42 U.S.C. 9602) (40 CFR Part 302);

(ii) Materials that are of an explosive, flammable, or pyrotechnic nature; or

(iii) Materials otherwise identified by the Secretary of Defense as specified in DoD regulations.

(b) In accordance with 10 U.S.C. 2692, the Contractor is prohibited from storing or disposing of non-DoD-owned toxic or hazardous materials on a DoD installation, except to the extent authorized by a statutory exception to 10 U.S.C. 2692 or as authorized by the Secretary of Defense or his designee.

59. *FAR 52.225-9 BUY AMERICAN ACT—CONSTRUCTION MATERIALS (JUNE 2003) (For Contracts less than \$6.481 million)

(a) Definitions. As used in this clause—

“Component” means an article, material, or supply incorporated directly into a construction material.

“Construction material” means an article, material, or supply brought to the construction site by the Contractor or a subcontractor for incorporation into the building or work. The term also includes an item brought to the site preassembled from articles, materials, or supplies. However, emergency life safety systems, such as emergency lighting, fire alarm, and audio evacuation systems, that are discrete systems incorporated into a public building or work and that are produced as complete systems, are evaluated as a single and distinct construction material regardless of when or how the individual parts or components of those systems are delivered to the construction site. Materials purchased directly by the Government are supplies, not construction material.

“Cost of components” means—

(1) For components purchased by the Contractor, the acquisition cost, including transportation costs to the place of incorporation into the construction material (whether or not such costs are paid to a domestic firm), and any applicable duty (whether or not a duty-free entry certificate is issued); or

(2) For components manufactured by the Contractor, all costs associated with the manufacture of the component, including transportation costs as described in paragraph (1) of this definition, plus allocable overhead costs, but excluding profit. Cost of components does not include any costs associated with the manufacture of the end product.

“Domestic construction material” means—

(1) An unmanufactured construction material mined or produced in the United States; or

(2) A construction material manufactured in the United States, if the cost of its components mined, produced, or manufactured in the United States exceeds 50 percent of the cost of all its components. Components of foreign origin of the same class or kind for which nonavailability determinations have been made are treated as domestic.

“Foreign construction material” means a construction material other than a domestic construction material.

“United States” means the 50 States, the District of Columbia, and outlying areas.

(b) *Domestic preference.* (1) This clause implements the Buy American Act (41 U.S.C. 10a - 10d) by providing a preference for domestic construction material. The Contractor shall use only domestic construction material in performing this contract, except as provided in paragraphs (b)(2) and (b)(3) of this clause.

(2) This requirement does not apply to the construction material or components listed by the Government as follows:

[Contracting Officer to list applicable excepted materials or indicate “none”]

(3) The Contracting Officer may add other foreign construction material to the list in paragraph (b)(2) of this clause if the Government determines that—

(i) The cost of domestic construction material would be unreasonable. The cost of a particular domestic construction material subject to the requirements of the Buy American Act is unreasonable when the cost of such material exceeds the cost of foreign material by more than 6 percent;

(ii) The application of the restriction of the Buy American Act to a particular construction material would be impracticable or inconsistent with the public interest; or

(iii) The construction material is not mined, produced, or manufactured in the United States in sufficient and reasonably available commercial quantities of a satisfactory quality.

(c) *Request for determination of inapplicability of the Buy American Act.* (1)(i) Any Contractor request to use foreign construction material in accordance with paragraph (b)(3) of this clause shall include adequate information for Government evaluation of the request, including—

(A) A description of the foreign and domestic construction materials;

(B) Unit of measure;

(C) Quantity;

(D) Price;

(E) Time of delivery or availability;

(F) Location of the construction project;

(G) Name and address of the proposed supplier; and

(H) A detailed justification of the reason for use of foreign construction materials cited in accordance with paragraph (b)(3) of this clause.

(ii) A request based on unreasonable cost shall include a reasonable survey of the market and a completed price comparison table in the format in paragraph (d) of this clause.

(iii) The price of construction material shall include all delivery costs to the construction site and any applicable duty (whether or not a duty-free certificate may be issued).

(iv) Any Contractor request for a determination submitted after contract award shall explain why the Contractor could not reasonably foresee the need for such determination and could not have requested the determination before contract award. If the Contractor does not submit a satisfactory explanation, the Contracting Officer need not make a determination.

(2) If the Government determines after contract award that an exception to the Buy American Act applies and the Contracting Officer and the Contractor negotiate adequate consideration, the Contracting Officer will modify the contract to allow use of the foreign construction material. However, when the basis for the exception is the unreasonable price of a domestic construction material, adequate consideration is not less than the differential

established in paragraph (b)(3)(i) of this clause.

(3) Unless the Government determines that an exception to the Buy American Act applies, use of foreign construction material is noncompliant with the Buy American Act.

(d) *Data*. To permit evaluation of requests under paragraph (c) of this clause based on unreasonable cost, the Contractor shall include the following information and any applicable supporting data based on the survey of suppliers:

FOREIGN AND DOMESTIC CONSTRUCTION MATERIALS PRICE COMPARISON			
Construction Material Description	Unit of Measure	Quantity	Price (Dollars)*
Item 1:			
Foreign construction material			
Domestic construction material			
Item 2:			
Foreign construction material			
Domestic construction material			

[List name, address, telephone number, and contact for suppliers surveyed. Attach copy of response; if oral, attach summary.]
[Include other applicable supporting information.]

[* Include all delivery costs to the construction site and any applicable duty (whether or not a duty-free entry certificate is issued).]

60. *FAR 52.225-10 NOTICE OF BUY AMERICAN ACT REQUIREMENT—CONSTRUCTION MATERIALS (MAY 2002) (Applicable with FAR 52.225-9)

(a) *Definitions*. “Construction material,” “domestic construction material,” and “foreign construction material,” as used in this provision, are defined in the clause of this solicitation entitled “Buy American Act—Construction Materials” (Federal Acquisition Regulation (FAR) clause 52.225-9).

(b) *Requests for determinations of inapplicability*. An offeror requesting a determination regarding the inapplicability of the Buy American Act should submit the request to the Contracting Officer in time to allow a determination before submission of offers. The offeror shall include the information and applicable supporting data required by paragraphs (c) and (d) of the clause at FAR 52.225-9 in the request. If an offeror has not requested a determination regarding the inapplicability of the Buy American Act before submitting its offer, or has not received a response to a previous request, the offeror shall include the information and supporting data in the offer.

(c) *Evaluation of offers*. (1) The Government will evaluate an offer requesting exception to the requirements of the Buy American Act, based on claimed unreasonable cost of domestic construction material, by adding to the offered price the appropriate percentage of the cost of such foreign construction material, as specified in paragraph (b)(3)(i) of the clause at FAR 52.225-9.

(2) If evaluation results in a tie between an offeror that requested the substitution of foreign construction material based on unreasonable cost and an offeror that did not request an exception, the Contracting Officer will award to the offeror that did not request an exception based on unreasonable cost.

(d) *Alternate offers*. (1) When an offer includes foreign construction material not listed by the Government in this solicitation in paragraph (b)(2) of the clause at FAR 52.225-9, the offeror also may submit an alternate offer based on use of equivalent domestic construction material.

(2) If an alternate offer is submitted, the offeror shall submit a separate Standard Form 1442 for the alternate offer, and a separate price comparison table prepared in accordance with paragraphs (c) and (d) of the clause at FAR 52.225-9 for the offer that is based on the use of any foreign construction material for which the Government has not yet determined an exception applies.

(3) If the Government determines that a particular exception requested in accordance with paragraph (c) of the clause at FAR 52.225-9 does not apply, the Government will evaluate only those offers based on use of the equivalent domestic construction material, and the offeror shall be required to furnish such domestic construction material. An offer based on use of the foreign construction material for which an exception was

requested—

- (i) Will be rejected as nonresponsive if this acquisition is conducted by sealed bidding; or
- (ii) May be accepted if revised during negotiations.

(End of provision)

61. *FAR 52.225-11 BUY AMERICAN ACT—CONSTRUCTION MATERIALS UNDER TRADE AGREEMENTS (JUNE 2003) [For Contracts more than \$6,481,000] ALTERNATE I (MAY 2002) [For Contracts between \$6.481 and 7.304733 Million]

(a) *Definitions.* As used in this clause—

“Component” means an article, material, or supply incorporated directly into a construction material.

“Construction material” means an article, material, or supply brought to the construction site by the Contractor or subcontractor for incorporation into the building or work. The term also includes an item brought to the site preassembled from articles, materials, or supplies. However, emergency life safety systems, such as emergency lighting, fire alarm, and audio evacuation systems, that are discrete systems incorporated into a public building or work and that are produced as complete systems, are evaluated as a single and distinct construction material regardless of when or how the individual parts or components of those systems are delivered to the construction site. Materials purchased directly by the Government are supplies, not construction material.

“Cost of components” means—

(1) For components purchased by the Contractor, the acquisition cost, including transportation costs to the place of incorporation into the construction material (whether or not such costs are paid to a domestic firm), and any applicable duty (whether or not a duty-free entry certificate is issued); or

(2) For components manufactured by the Contractor, all costs associated with the manufacture of the component, including transportation costs as described in paragraph (1) of this definition, plus allocable overhead costs, but excluding profit. Cost of components does not include any costs associated with the manufacture of the end product.

“Designated country” means any of the following countries:

Aruba	Kiribati
Austria	Korea, Republic of
Bangladesh	Lesotho
Belgium	Liechtenstein
Benin	Luxembourg
Bhutan	Malawi
Botswana	Maldives
Burkina Faso	Mali
Burundi	Mozambique
Canada	Nepal
Cape Verde	Netherlands
Central African Republic	Niger
Chad	Norway
Comoros	Portugal
Denmark	Rwanda
Djibouti	Sao Tome and Principe
Equatorial Guinea	Sierra Leone
Finland	Singapore
France	Somalia
Gambia	Spain
Germany	Sweden
Greece	Switzerland
Guinea	Tanzania U.R.
Guinea-Bissau	Togo
Haiti	Tuvalu

Hong Kong	Uganda
Iceland	United Kingdom
Ireland	Vanuatu
Israel	Western Samoa
Italy	Yemen
Japan	

“Designated country construction material” means a construction material that—

- (1) Is wholly the growth, product, or manufacture of a designated country; or
- (2) In the case of a construction material that consists in whole or in part of materials from another country, has been substantially transformed in a designated country into a new and different construction material distinct from the materials from which it was transformed.

“Domestic construction material” means—

- (1) An unmanufactured construction material mined or produced in the United States; or
- (2) A construction material manufactured in the United States, if the cost of its components mined, produced, or manufactured in the United States exceeds 50 percent of the cost of all its components. Components of foreign origin of the same class or kind for which nonavailability determinations have been made are treated as domestic.

“Foreign construction material” means a construction material other than a domestic construction material.

“North American Free Trade Agreement country” means Canada or Mexico.

“North American Free Trade Agreement country construction material” means a construction material that—

- (1) Is wholly the growth, product, or manufacture of a North American Free Trade Agreement (NAFTA) country; or
- (2) In the case of a construction material that consists in whole or in part of materials from another country, has been substantially transformed in a NAFTA country into a new and different construction material distinct from the materials from which it was transformed.

“United States” means the 50 States, the District of Columbia, and outlying areas.

(b) *Construction materials.* (1) This clause implements the Buy American Act (41 U.S.C. 10a - 10d) by providing a preference for domestic construction material. In addition, the Contracting Officer has determined that the Trade Agreements Act and the North American Free Trade Agreement (NAFTA) apply to this acquisition. Therefore, the Buy American Act restrictions are waived for designated country and NAFTA country construction materials.

(2) The Contractor shall use only domestic, designated country, or NAFTA country construction material in performing this contract, except as provided in paragraphs (b)(3) and (b)(4) of this clause.

(3) The requirement in paragraph (b)(2) of this clause does not apply to the construction materials or components listed by the Government as follows:

[Contracting Officer to list applicable excepted materials or indicate “none”]

(4) The Contracting Officer may add other foreign construction material to the list in paragraph (b)(3) of this clause if the Government determines that—

(i) The cost of domestic construction material would be unreasonable. The cost of a particular domestic construction material subject to the restrictions of the Buy American Act is unreasonable when the cost of such material exceeds the cost of foreign material by more than 6 percent;

(ii) The application of the restriction of the Buy American Act to a particular construction material would be impracticable or inconsistent with the public interest; or

(iii) The construction material is not mined, produced, or manufactured in the United States in sufficient and reasonably available commercial quantities of a satisfactory quality.

(c) *Request for determination of inapplicability of the Buy American Act.* (1)(i) Any Contractor request to use foreign construction material in accordance with paragraph (b)(4) of this clause shall include adequate information for Government evaluation of the request, including—

- (A) A description of the foreign and domestic construction materials;
- (B) Unit of measure;

- (C) Quantity;
- (D) Price;
- (E) Time of delivery or availability;
- (F) Location of the construction project;
- (G) Name and address of the proposed supplier; and
- (H) A detailed justification of the reason for use of foreign construction

materials cited in accordance with paragraph (b)(3) of this clause.

(ii) A request based on unreasonable cost shall include a reasonable survey of the market and a completed price comparison table in the format in paragraph (d) of this clause.

(iii) The price of construction material shall include all delivery costs to the construction site and any applicable duty (whether or not a duty-free certificate may be issued).

(iv) Any Contractor request for a determination submitted after contract award shall explain why the Contractor could not reasonably foresee the need for such determination and could not have requested the determination before contract award. If the Contractor does not submit a satisfactory explanation, the Contracting Officer need not make a determination.

(2) If the Government determines after contract award that an exception to the Buy American Act applies and the Contracting Officer and the Contractor negotiate adequate consideration, the Contracting Officer will modify the contract to allow use of the foreign construction material. However, when the basis for the exception is the unreasonable price of a domestic construction material, adequate consideration is not less than the differential established in paragraph (b)(4)(i) of this clause.

(3) Unless the Government determines that an exception to the Buy American Act applies, use of foreign construction material is noncompliant with the Buy American Act.

(d) *Data*. To permit evaluation of requests under paragraph (c) of this clause based on unreasonable cost, the Contractor shall include the following information and any applicable supporting data based on the survey of suppliers:

FOREIGN AND DOMESTIC CONSTRUCTION MATERIALS PRICE COMPARISON			
Construction Material Description	Unit of Measure	Quantity	Price (Dollars)*
Item 1:			
Foreign construction material			
Domestic construction material			
Item 2:			
Foreign construction material			
Domestic construction material			

[List name, address, telephone number, and contact for suppliers surveyed. Attach copy of response; if oral, attach summary.]
[Include other applicable supporting information.]

[* Include all delivery costs to the construction site and any applicable duty (whether or not a duty-free entry certificate is issued).]

(End of clause)

Alternate I (May 2002). As prescribed in 25.1102(c)(3), delete the definitions of “North American Free Trade Agreement country” and “North American Free Trade Agreement country construction material” from the definitions in paragraph (a) of the basic clause and substitute the following paragraphs (b)(1) and (b)(2) for paragraphs (b)(1) and (b)(2) of the basic clause:

(b) *Construction materials*. (1) This clause implements the Buy American Act (41 U.S.C. 10a - 10d) by providing a preference for domestic construction material. In addition, the Contracting Officer has determined that the Trade Agreements Act applies to this acquisition. Therefore, the Buy American Act restrictions are waived for designated country construction materials.

(2) The Contractor shall use only domestic or designated country construction material in performing this

contract, except as provided in paragraphs (b)(3) and (b)(4) of this clause.

62. *FAR 52.225-12 NOTICE OF BUY AMERICAN ACT REQUIREMENT—CONSTRUCTION MATERIALS UNDER TRADE AGREEMENTS (MAY 2002) [Applicable with FAR 52.225-11] ALTERNATE II (MAY 2002) [For Contracts Between 6.481 and 7.304733 Million]

(a) *Definitions.* “Construction material,” “designated country construction material,” “domestic construction material,” “foreign construction material,” and “NAFTA country construction material,” as used in this provision, are defined in the clause of this solicitation entitled “Buy American Act—Construction Materials under Trade Agreements” (Federal Acquisition Regulation (FAR) clause 52.225-11).

(b) *Requests for determination of inapplicability.* An offeror requesting a determination regarding the inapplicability of the Buy American Act should submit the request to the Contracting Officer in time to allow a determination before submission of offers. The offeror shall include the information and applicable supporting data required by paragraphs (c) and (d) of FAR clause 52.225-11 in the request. If an offeror has not requested a determination regarding the inapplicability of the Buy American Act before submitting its offer, or has not received a response to a previous request, the offeror shall include the information and supporting data in the offer.

(c) *Evaluation of offers.* (1) The Government will evaluate an offer requesting exception to the requirements of the Buy American Act, based on claimed unreasonable cost of domestic construction materials, by adding to the offered price the appropriate percentage of the cost of such foreign construction material, as specified in paragraph (b)(4)(i) of FAR clause 52.225-11.

(2) If evaluation results in a tie between an offeror that requested the substitution of foreign construction material based on unreasonable cost and an offeror that did not request an exception, the Contracting Officer will award to the offeror that did not request an exception based on unreasonable cost.

(d) *Alternate offers.* (1) When an offer includes foreign construction material, other than designated country or NAFTA country construction material, that is not listed by the Government in this solicitation in paragraph (b)(3) of FAR clause 52.225-11, the offeror also may submit an alternate offer based on use of equivalent domestic, designated country, or NAFTA country construction material.

(2) If an alternate offer is submitted, the offeror shall submit a separate Standard Form 1442 for the alternate offer, and a separate price comparison table prepared in accordance with paragraphs (c) and (d) of FAR clause 52.225-11 for the offer that is based on the use of any foreign construction material for which the Government has not yet determined an exception applies.

(3) If the Government determines that a particular exception requested in accordance with paragraph (c) of FAR clause 52.225-11 does not apply, the Government will evaluate only those offers based on use of the equivalent domestic, designated country, or NAFTA country construction material, and the offeror shall be required to furnish such domestic, designated country, or NAFTA country construction material. An offer based on use of the foreign construction material for which an exception was requested—

- (i) Will be rejected as nonresponsive if this acquisition is conducted by sealed bidding; or
- (ii) May be accepted if revised during negotiations.

(End of provision)

ALTERNATE II (MAY 2002) [For Contracts between 6.481 and 7.304733 Million]

As prescribed in 25.1102(d)(3), substitute the following paragraphs (a) and (d) for paragraphs (a) and (d) of the basic provision:

(a) *Definitions.* “Construction material,” “designated country construction material,” “domestic construction material,” and “foreign construction material,” as used in this provision, are defined in the clause of this solicitation entitled “Buy American Act—Construction Materials under Trade Agreements” (Federal Acquisition Regulation (FAR) clause 52.225-11).

(d) *Alternate offers.* (1) When an offer includes foreign construction material, other than designated country construction material, that is not listed by the Government in this solicitation in paragraph (b)(3) of FAR clause 52.225-11, the offeror also may submit an alternate offer based on use of equivalent domestic or designated country construction material.

(2) If an alternate offer is submitted, the offeror shall submit a separate Standard Form 1442 for the alternate offer, and a separate price comparison table prepared in accordance with paragraphs (c) and (d) of FAR

clause 52.225-11 for the offer that is based on the use of any foreign construction material for which the Government has not yet determined an exception applies.

(3) If the Government determines that a particular exception requested in accordance with paragraph (c) of FAR clause 52.225-11 does not apply, the Government will evaluate only those offers based on use of the equivalent domestic or designated country construction material, and the offeror shall be required to furnish such domestic or designated country construction material. An offer based on use of the foreign construction material for which an exception was requested—

- (i) Will be rejected as nonresponsive if this acquisition is conducted by sealed bidding; or
- (ii) May be accepted if revised during negotiations.

63. *FAR 52.225-13 RESTRICTIONS ON CERTAIN FOREIGN PURCHASES (JUNE 2003)

(a) The Contractor shall not acquire, for use in the performance of this contract, any supplies or services originating from sources within, or that were located in or transported from or through, countries whose products are banned from importation into the United States and its outlying areas under regulations of the Office of Foreign Assets Control, Department of the Treasury. Those countries are Cuba, Iran, Iraq, Libya, North Korea, Sudan, the territory of Afghanistan controlled by the Taliban, and Serbia (excluding the territory of Kosovo).

(b) The Contractor shall not acquire for use in the performance of this contract any supplies or services from entities controlled by the government of Iraq.

(c) The Contractor shall insert this clause, including this paragraph (c), in all subcontracts.
(End of clause)

64. DFARS 252.226-7001 UTILIZATION OF INDIAN ORGANIZATIONS AND INDIAN-OWNED ECONOMIC ENTERPRISES--DOD CONTRACTS (SEP 2001)

(a) *Definitions.* As used in this clause--

"Indian" means any person who is a member of any Indian tribe, band, group, pueblo, or community that is recognized by the Federal Government as eligible for services from the Bureau of Indian Affairs (BIA) in accordance with 25 U.S.C. 1452(c) and any "Native" as defined in the Alaska Native Claims Settlement Act (43 U.S.C. 1601).

"Indian organization" means the governing body of any Indian tribe or entity established or recognized by the governing body of an Indian tribe for the purposes of 25 U.S.C. Chapter 17.

"Indian-owned economic enterprise" means any Indian-owned (as determined by the Secretary of the Interior) commercial, industrial, or business activity established or organized for the purpose of profit, provided that Indian ownership constitutes not less than 51 percent of the enterprise.

"Indian tribe" means any Indian tribe, band, group, pueblo, or community, including native villages and native groups (including corporations organized by Kenai, Juneau, Sitka, and Kodiak) as defined in the Alaska Native Claims Settlement Act, that is recognized by the Federal Government as eligible for services from BIA in accordance with 25 U.S.C. 1452(c).

"Interested party" means a contractor or an actual or prospective offeror whose direct economic interest would be affected by the award of a subcontract or by the failure to award a subcontract.

(b) The Contractor shall use its best efforts to give Indian organizations and Indian-owned economic enterprises the maximum practicable opportunity to participate in the subcontracts it awards, to the fullest extent consistent with efficient performance of the contract.

(c) The Contracting Officer and the Contractor, acting in good faith, may rely on the representation of an Indian organization or Indian-owned economic enterprise as to its eligibility, unless an interested party challenges its status or the Contracting Officer has independent reason to question that status.

(d) In the event of a challenge to the representation of a subcontractor, the Contracting Officer will refer the matter to the--

U.S. Department of the Interior

Bureau of Indian Affairs
Attn: Chief, Division of Contracting and
Grants Administration
1849 C Street NW, MS-2626-MIB
Washington, DC 20240-4000.

The BIA will determine the eligibility and will notify the Contracting Officer. No incentive payment will be made--

- (1) Within 50 working days of subcontract award;
- (2) While a challenge is pending; or
- (3) If a subcontractor is determined to be an ineligible participant.

(e)(1) The Contractor, on its own behalf or on behalf of a subcontractor at any tier, may request an adjustment under the Indian Incentive Program to the following:

- (i) The estimated cost of a cost-type contract.
- (ii) The target cost of a cost-plus-incentive-fee contract.
- (iii) The target cost and ceiling price of a fixed-price incentive contract.
- (iv) The price of a firm-fixed-price contract.

(2) The amount of the adjustment that may be made to the contract is 5 percent of the estimated cost, target cost, or firm-fixed price included in the subcontract initially awarded to the Indian organization or Indian-owned economic enterprise.

(3) The Contractor has the burden of proving the amount claimed and must assert its request for an adjustment prior to completion of contract performance.

(4) The Contracting Officer, subject to the terms and conditions of the contract and the availability of funds, will authorize an incentive payment of 5 percent of the amount paid to the subcontractor.

(5) If the Contractor requests and receives an adjustment on behalf of a subcontractor, the Contractor is obligated to pay the subcontractor the adjustment.

(f) The Contractor shall insert the substance of this clause, including this paragraph (f), in all subcontracts that--

- (1) Are for other than commercial items; and
- (2) Are expected to exceed the simplified acquisition threshold in Part 2 of the Federal Acquisition

Regulation.

(End of clause)

65. *FAR 52.227-1

AUTHORIZATION AND CONSENT (JUL 1995)

(a) The Government authorizes and consents to all use and manufacture, in performing this contract or any subcontract at any tier, of any invention described in and covered by a United States patent

(1) embodied in the structure or composition of any article the delivery of which is accepted by the Government under this contract or

(2) used in machinery, tools, or methods whose use necessarily results from compliance by the Contractor or a subcontractor with

(i) specifications or written provisions forming a part of this contract or
(ii) specific written instructions given by the Contracting Officer directing the manner of performance. The entire liability to the Government for infringement of a patent of the United States shall be determined solely by the provisions of the indemnity clause, if any, included in this contract or any subcontract hereunder (including any lower-tier subcontract), and the Government assumes liability for all other infringement to the extent of the authorization and consent hereinabove granted.

(b) The Contractor agrees to include, and require inclusion of, this clause, suitably modified to identify the parties, in all subcontracts at any tier for supplies or services (including construction, architect-engineer services, and materials, supplies, models, samples, and design or testing services expected to exceed the simplified acquisition threshold) however, omission of this clause from any subcontract, including those at or below the simplified acquisition threshold, does not affect this authorization and consent.

66. *FAR 52.227-2 NOTICE AND ASSISTANCE REGARDING PATENT AND COPYRIGHT INFRINGEMENT (AUG 1996)

(a) The Contractor shall report to the Contracting Officer, promptly and in reasonable written detail, each notice or claim of patent or copy-right infringement based on the performance of this contract of which the Contractor has knowledge.

(b) In the event of any claim or suit against the Government on account of any alleged patent or copyright infringement arising out of the performance of this contract or out of the use of any supplies furnished or work or services performed under this contract, the Contractor shall furnish to the Government, when requested by the Contracting Officer, all evidence and information in possession of the Contractor pertaining to such suit or claim. Such evidence and information shall be furnished at the expense of the Government except where the Contractor has agreed to indemnify the Government.

(c) The Contractor agrees to include, and require inclusion of, this clause in all subcontracts at any tier for supplies or services (including construction and architect-engineer subcontracts and those for material, supplies, models, samples, or design or testing services) expected to exceed the simplified acquisition threshold at FAR 2.101.

67. *FAR 52.227-4 PATENT INDEMNITY--CONSTRUCTION CONTRACTS (APR 1984)

Except as otherwise provided, the Contractor agrees to indemnify the Government and its officers, agents, and employees against liability, including costs and expenses, for infringement upon any United States patent (except a patent issued upon an application that is now or may hereafter be withheld from issue pursuant to a Secrecy Order under 35 U.S.C. 181) arising out of performing this contract or out of the use or disposal by or for the account of the Government of supplies furnished or work performed under this contract.

68. DFARS 252.227-7022 GOVERNMENT RIGHTS (UNLIMITED) (MAR 1979)

The Government shall have unlimited rights, in all drawings, designs, specifications, notes and other works developed in the performance of this contract, including the right to use same on any other Government design or construction without additional compensation to the Contractor. The Contractor hereby grants to the Government a paid-up license throughout the world to all such works to which he may assert or establish any claim under design patent or copyright laws. The Contractor for a period of three (3) years after completion of the project agrees to furnish the original or copies of all such works on the request of the Contracting Officer. (End of clause)

69. DFARS 252.227-7023 DRAWINGS AND OTHER DATA TO BECOME PROPERTY OF GOVERNMENT (MAR 1979)

All designs, drawings, specifications, notes and other works developed in the performance of this contract shall become the sole property of the Government and may be used on any other design or construction without additional compensation to the Contractor. The Government shall be considered the "person for whom the work was prepared" for the purpose of authorship in any copyrightable work under 17 U.S.C. 201(b). With respect thereto, the Contractor agrees not to assert or authorize others to assert any rights nor establish any claim under the design patent or copyright laws. The Contractor for a period of three (3) years after completion of the project agrees to furnish all retained works on the request of the Contracting Officer. Unless otherwise provided in this contract, the Contractor shall have the right to retain copies of all works beyond such period.

70. DFARS 252.227-7033 RIGHTS IN SHOP DRAWINGS (APR 1966)

(a) Shop drawings for construction means drawings, submitted to the Government by the Construction Contractor, subcontractor or any lower-tier subcontractor pursuant to a construction contract, showing in detail

- (i) the proposed fabrication and assembly of structural elements and (ii) the installation (i.e., form, fit, and attachment details) of materials or equipment. The Government may duplicate, use, and disclose in any manner and for any purpose shop drawings delivered under this contract.
- (b) This clause, including this paragraph (b), shall be included in all subcontracts hereunder at any tier.

71. *FAR 52.228-2 ADDITIONAL BOND SECURITY (OCT 1997)

The Contractor shall promptly furnish additional security required to protect the Government and persons supplying labor or materials under this contract if--

- (a) Any surety upon any bond, or issuing financial institution for other security, furnished with this contract becomes unacceptable to the Government;
- (b) Any surety fails to furnish reports on its financial condition as required by the Government;
- (c) The contract price is increased so that the penal sum of any bond becomes inadequate in the opinion of the Contracting Officer; or
- (d) An irrevocable letter of credit (ILC) used as security will expire before the end of the period of required security. If the Contractor does not furnish an acceptable extension or replacement ILC, or other acceptable substitute, at least 30 days before an ILC's scheduled expiration, the Contracting Officer has the right to immediately draw on the ILC.

72. *FAR 52.228-5 INSURANCE--WORK ON A GOVERNMENT INSTALLATION (JAN 1997) [For Contracts Exceeding \$100,000]

- (a) The Contractor shall, at its own expense, provide and maintain during the entire performance of this contract, at least the kinds and minimum amounts of insurance required in the Schedule or elsewhere in the contract.
- (b) Before commencing work under this contract, the Contractor shall notify the Contracting Officer in writing that the required insurance has been obtained. The policies evidencing required insurance shall contain an endorsement to the effect that any cancellation or any material change adversely affecting the Government's interest shall not be effective
- (1) for such period as the laws of the State in which this contract is to be performed prescribe, or
- (2) until 30 days after the insurer or the Contractor gives written notice to the Contracting Officer, whichever period is longer.
- (c) The Contractor shall insert the substance of this clause, including this paragraph (c), in subcontracts under this contract that require work on a Government installation and shall require subcontractors to provide and maintain the insurance required in the Schedule or elsewhere in the contract. The Contractor shall maintain a copy of all subcontractors' proofs of required insurance, and shall make copies available to the Contracting Officer upon request.

73. *FAR 52.228-11 PLEDGES OF ASSETS (FEB 1992)

- (a) Offerors shall obtain from each person acting as an individual surety on a bid guarantee, a performance bond, or a payment bond--
- (1) Pledge of assets; and
- (2) Standard Form 28, Affidavit of Individual Surety.
- (b) Pledges of assets from each person acting as an individual surety shall be in the form of--
- (1) Evidence of an escrow account containing cash, certificates of deposit, commercial or Government securities, or other assets described in FAR 28.203-2 (except see 28.203-2(b)(2) with respect to Government securities held in book entry form) and/or;
- (2) A recorded lien on real estate. The offeror will be required to provide--

(i) Evidence of title in the form of a certificate of title prepared by a title insurance company approved by the United States Department of Justice. This title evidence must show fee simple title vested in the surety along with any concurrent owners; whether any real estate taxes are due and payable; and any recorded encumbrances against the property, including the lien filed in favor of the Government as required by FAR 28.203-3(d);

(ii) Evidence of the amount due under any encumbrance shown in the evidence of title;

(iii) A copy of the current real estate tax assessment of the property or a current appraisal dated no earlier than 6 months prior to the date of the bond, prepared by a professional appraiser who certifies that the appraisal has been conducted in accordance with the generally accepted appraisal standards as reflected in the Uniform Standards of Professional Appraisal Practice, as promulgated by the Appraisal Foundation.

74. *FAR 52.228-12 PROSPECTIVE SUBCONTRACTOR REQUESTS FOR BONDS (OCT 1995)

In accordance with Section 806(a)(3) of Public Law 102-190, as amended by Sections 2091 and 8105 of Pub. L. 103-355, upon the request of a prospective subcontractor or supplier offering to furnish labor or material for the performance of this contract for which a payment bond has been furnished to the Government pursuant to the Miller Act, the Contractor shall promptly provide a copy of such payment bond to the requestor.

75. FAR 52.228-14 IRREVOCABLE LETTER OF CREDIT (DEC 1999)

(a) "Irrevocable letter of credit" (ILC), as used in this clause, means a written commitment by a federally insured financial institution to pay all or part of a stated amount of money, until the expiration date of the letter, upon presentation by the Government (the beneficiary) of a written demand therefor. Neither the financial institution nor the offeror/Contractor can revoke or condition the letter of credit.

(b) If the offeror intends to use an ILC in lieu of a bid bond, or to secure other types of bonds such as performance and payment bonds, the letter of credit and letter of confirmation formats in paragraphs (e) and (f) of this clause shall be used.

(c) The letter of credit shall be irrevocable, shall require presentation of no document other than a written demand and the ILC (including confirming letter, if any), shall be issued/confirmed by an acceptable federally insured financial institution as provided in paragraph (d) of this clause, and--

(1) If used as a bid guarantee, the ILC shall expire no earlier than 60 days after the close of the bid acceptance period;

(2) If used as an alternative to corporate or individual sureties as security for a performance or payment bond, the offeror/Contractor may submit an ILC to cover the entire period of performance or may submit an ILC with an initial expiration date estimated to cover the entire period for which financial security is required or may submit an ILC with an initial expiration that is a minimum period of one year from the date of issuance. The ILC shall provide that, unless the issuer provides the beneficiary written notice of non-renewal of least 60 days in advance of the current expiration date, the ILC is automatically extended without amendment for one year from the expiration date, or any future expiration date, until the period of required coverage is completed and the Contracting Officer provides the financial institution with a written statement waiving the right to payment. The period of required coverage shall be:

(i) For contracts subject to the Miller Act, the later of--

(A) One year following the expected date of final payment;

(B) For performance bonds only, until completion of any warranty period; or

(C) For payment bonds only, until resolution of all claims filed against the

payment bond during the one-year period following final payment.

(ii) For contracts not subject to the Miller Act, the later of--

(A) 90 days following final payment; or

(B) For performance bonds only, until completion of any warranty period.

(d) Only federally insured financial institution rated investment grade or higher shall issue or confirm the ILC. The offeror/Contractor shall provide the Contracting Officer a credit rating that indicates the financial institution has the required rating(s) as of the date of issuance of the ILC. Unless the financial institution issuing the ILC had letter of credit business of at least \$25 million in the past year, ILCs over \$5 million must be confirmed by another acceptable financial institution that had letter of credit business of at least \$25 million in the past year.

(e) The following format shall be used by the issuing financial institution to create an ILC:

[Issuing Financial Institution's Letterhead or Name and Address]

Issue Date -----

Irrevocable Letter of Credit No.-----

Account party's name-----

Account party's address-----

For Solicitation No.-----

(For reference only)

TO: [U.S. Government agency]

[U.S. Government agency's address]

1. We hereby establish this irrevocable and transferable Letter of Credit in your favor for one or more drawings up to United States \$ _____. This Letter of Credit is payable at [issuing financial institution's and, if any, confirming financial institution's] office at [issuing financial institution's address and, if any, confirming financial institution's address] and expires with our close of business on _____, or any automatically extended expiration date.

2. We hereby undertake to honor your or transferee's sight draft(s) drawn on issuing or, if any, the confirming financial institution, for all or any part of this credit if presented with this Letter of Credit and confirmation, if any, at the office specified in paragraph 1 of this Letter of Credit on or before the expiration date or any automatically extended expiration date.

3. [This paragraph is omitted if used as a bid guarantee, and subsequent paragraphs are renumbered.] It is a condition of this Letter of Credit that it is deemed to be automatically extended without amendment for one year from the expiration date hereof, or any future expiration date, unless at least 60 days prior to any expiration date, we notify you or the transferee by registered mail, or other receipted means of delivery, that we elect not to consider this Letter of Credit renewed for any such additional period. At the time we notify you, we also agree to notify the account party (and confirming financial institution, if any) by the same means of delivery.

4. This Letter of Credit is transferable. Transfers and assignments of proceeds are to be effected without charge to either the beneficiary or the transferee/assignee of proceeds. Such transfer or assignment shall be only at the written direction of the Government (the beneficiary) in a form satisfactory to the issuing financial institution and the confirming financial institution, if any.

5. This Letter of Credit is subject to the Uniform Customs and Practice (UCP) for Documentary Credits, 1993 Revision, International Chamber of Commerce Publication No. 500, and to the extent not inconsistent therewith, to the laws of _____ [state of confirming financial institution, if any, otherwise state of issuing financial institution].

6. If this credit expires during an interruption of business of this financial institution as described in Article 17 of the UCP, the financial institution specifically agrees to effect payment if this credit is drawn against within 30 days after the resumption of our business.

Sincerely,

[Issuing financial institution]

(f) The following format shall be used by the financial institution to confirm an ILC:

[Confirming Financial Institution's Letterhead or Name and Address]---

(Date) _____

Our Letter of Credit

Advice Number-----

Beneficiary:-----

[U.S. Government agency]

Issuing Financial Institution:-----

Issuing Financial Institution's LC No.:-----

Gentlemen:

1. We hereby confirm the above indicated Letter of Credit, the original of which is attached, issued by _____ [name of issuing financial institution] for drawings of up to United States dollars _____/U.S. \$ _____ and expiring with our close of business on _____ [the expiration date], or any automatically extended expiration date.

2. Draft(s) drawn under the Letter of Credit and this Confirmation are payable at our office located at _____.

3. We hereby undertake to honor sight draft(s) drawn under and presented with the Letter of Credit and this Confirmation at our offices as specified herein.

4. [This paragraph is omitted if used as a bid guarantee, and subsequent paragraphs are renumbered.] It is a condition of this confirmation that it be deemed automatically extended without amendment for one year from the expiration date hereof, or any automatically extended expiration date, unless:

(a) At least 60 days prior to any such expiration date, we shall notify the Contracting Officer, or the transferee and the issuing financial institution, by registered mail or other receipted means of delivery, that we elect not to consider this confirmation extended for any such additional period; or

(b) The issuing financial institution shall have exercised its right to notify you or the transferee, the account party, and ourselves, of its election not to extend the expiration date of the Letter of Credit.

5. This confirmation is subject to the Uniform Customs and Practice (UCP) for Documentary Credits, 1993 Revision, International Chamber of Commerce Publication No. 500, and to the extent not inconsistent therewith, to the laws of _____ [state of confirming financial institution].

6. If this confirmation expires during an interruption of business of this financial institution as described in Article 17 of the UCP, we specifically agree to effect payment if this credit is drawn against within 30 days after the resumption of our business.

Sincerely,

[Confirming financial institution]

(g) The following format shall be used by the Contracting Officer for a sight draft to draw on the Letter of Credit:
SIGHT DRAFT

[City, State]

(Date) _____

[Name and address of financial institution]

Pay to the order of-----

[Beneficiary Agency] _____

the sum of United States \$ _____

This draft is drawn under-----

Irrevocable Letter of Credit No.-----

[Beneficiary Agency]

By: _____

76. *FAR 52.228-15 PERFORMANCE AND PAYMENT BONDS (JULY 2000)

(a) *Definitions.* As used in this clause—

“Original contract price” means the award price of the contract; or, for requirements contracts, the price payable for the estimated total quantity; or, for indefinite-quantity contracts, the price payable for the specified minimum quantity. Original contract price does not include the price of any options, except those options exercised at the time of contract award.

(b) *Amount of required bonds.* Unless the resulting contract price is \$100,000 or less, the successful offeror shall furnish performance and payment bonds to the Contracting Officer as follows:

(1) *Performance bonds (Standard Form 25).* The penal amount of performance bonds at the time of contract award shall be 100 percent of the original contract price.

(2) *Payment Bonds (Standard Form 25-A).* The penal amount of payment bonds at the time of contract award shall be 100 percent of the original contract price.

(3) *Additional bond protection.* (i) The Government may require additional performance and payment bond protection if the contract price is increased. The increase in protection generally will equal 100 percent of the increase in contract price.

(ii) The Government may secure the additional protection by directing the Contractor to increase the penal amount of the existing bond or to obtain an additional bond.

(c) *Furnishing executed bonds.* The Contractor shall furnish all executed bonds, including any necessary reinsurance agreements, to the Contracting Officer, within the time period specified in the Bid Guarantee provision of the solicitation, or otherwise specified by the Contracting Officer, but in any event, before starting work.

(d) *Surety or other security for bonds.* The bonds shall be in the form of firm commitment, supported by corporate sureties whose names appear on the list contained in Treasury Department Circular 570, individual sureties, or by other acceptable security such as postal money order, certified check, cashier's check, irrevocable letter of credit, or, in accordance with Treasury Department regulations, certain bonds or notes of the United States. Treasury Circular 570 is published in the Federal Register or may be obtained from the:

U.S. Department of Treasury
Financial Management Service
Surety Bond Branch
401 14th Street, NW, 2nd Floor, West Wing
Washington, DC 20227.

(e) *Notice of subcontractor waiver of protection (40 U.S.C. 270b(c)).* Any waiver of the right to sue on the payment bond is void unless it is in writing, signed by the person whose right is waived, and executed after such person has first furnished labor or material for use in the performance of the contract.

(End of clause)

77. FAR 52.229-3 FEDERAL, STATE, AND LOCAL TAXES (APR 2003) [For Contracts Exceeding \$100,000]

(a) As used in this clause--

"All applicable Federal, State, and local taxes and duties," means all taxes and duties, in effect on the contract date, that the taxing authority is imposing and collecting on the transactions or property covered by this contract.

"After-imposed Federal tax," means any new or increased Federal excise tax or duty, or tax that was exempted or excluded on the contract date but whose exemption was later revoked or reduced during the contract period, on the transactions or property covered by this contract that the Contractor is required to pay or bear as the

result of legislative, judicial, or administrative action taking effect after the contract date. It does not include social security tax or other employment taxes.

"After-relieved Federal tax," means any amount of Federal excise tax or duty, except social security or other employment taxes, that would otherwise have been payable on the transactions or property covered by this contract, but which the Contractor is not required to pay or bear, or for which the Contractor obtains a refund or drawback, as the result of legislative, judicial, or administrative action taking effect after the contract date.

"Contract date," means the date set for bid opening or, if this is a negotiated contract or a modification, the effective date of this contract or modification.

"Local taxes" includes taxes imposed by a possession or territory of the United States, Puerto Rico, or the Northern Mariana Islands, if the contract is performed wholly or partly in any of those areas.

(b) The contract price includes all applicable Federal, State, and local taxes and duties.

(c) The contract price shall be increased by the amount of any after-imposed Federal tax, provided the Contractor warrants in writing that no amount for such newly imposed Federal excise tax or duty or rate increase was included in the contract price, as a contingency reserve or otherwise.

(d) The contract price shall be decreased by the amount of any after-relieved Federal tax.

(e) The contract price shall be decreased by the amount of any Federal excise tax or duty, except social security or other employment taxes, that the Contractor is required to pay or bear, or does not obtain a refund of, through the Contractor's fault, negligence, or failure to follow instructions of the Contracting Officer.

(f) No adjustment shall be made in the contract price under this clause unless the amount of the adjustment exceeds \$250.

(g) The Contractor shall promptly notify the Contracting Officer of all matters relating to any Federal excise tax or duty that reasonably may be expected to result in either an increase or decrease in the contract price and shall take appropriate action as the Contracting Officer directs.

(h) The Government shall, without liability, furnish evidence appropriate to establish exemption from any Federal, State, or local tax when the Contractor requests such evidence and a reasonable basis exists to sustain the exemption.

78. RESERVED

79. FAR 52.230-1 COST ACCOUNTING STANDARDS NOTICES AND CERTIFICATION (JUNE 2000)

Note: This notice does not apply to small businesses or foreign governments. This notice is in three parts, identified by Roman numerals I through III.

Offerors shall examine each part and provide the requested information in order to determine Cost Accounting Standards (CAS) requirements applicable to any resultant contract.

If the offeror is an educational institution, Part II does not apply unless the contemplated contract will be subject to full or modified CAS coverage pursuant to 48 CFR 9903.201-2(c)(5) or 9903.201-2(c)(6), respectively.

I. DISCLOSURE STATEMENT--COST ACCOUNTING PRACTICES AND CERTIFICATION

(a) Any contract in excess of \$500,000 resulting from this solicitation will be subject to the requirements of the Cost Accounting Standards Board (48 CFR Chapter 99), except for those contracts which are exempt as specified in 48 CFR 9903.201-1.

(b) Any offeror submitting a proposal which, if accepted, will result in a contract subject to the requirements of 48 CFR Chapter 99 must, as a condition of contracting, submit a Disclosure Statement as required by 48 CFR 9903.202. When required, the Disclosure Statement must be submitted as a part of the offeror's proposal under this solicitation unless the offeror has already submitted a Disclosure Statement disclosing the practices used in connection with the pricing of this proposal. If an applicable Disclosure Statement has already been submitted, the offeror may satisfy the requirement for submission by providing the information requested in paragraph (c) of Part I of this provision.

CAUTION: In the absence of specific regulations or agreement, a practice disclosed in a Disclosure Statement shall not, by virtue of such disclosure, be deemed to be a proper, approved, or agreed-to practice for pricing proposals or accumulating and reporting contract performance cost data.

(c) Check the appropriate box below:

☐ (1) Certificate of Concurrent Submission of Disclosure Statement

The offeror hereby certifies that, as a part of the offer, copies of the Disclosure Statement have been submitted as follows: (i) original and one copy to the cognizant Administrative Contracting Officer (ACO) or cognizant Federal agency official authorized to act in that capacity (Federal official), as applicable, and (ii) one copy to the cognizant Federal auditor.

(Disclosure must be on Form No. CASB DS-1 or CASB DS-2, as applicable. Forms may be obtained from the cognizant ACO or Federal official and/or from the loose-leaf version of the Federal Acquisition Regulation.)

Date of Disclosure Statement: _____

Name and Address of Cognizant ACO or Federal Official Where Filed:

The offeror further certifies that the practices used in estimating costs in pricing this proposal are consistent with the cost accounting practices disclosed in the Disclosure Statement.

☐ (2) Certificate of Previously Submitted Disclosure Statement.

The offeror hereby certifies that the required Disclosure Statement was filed as follows:

Date of Disclosure Statement: _____

Name and Address of Cognizant ACO or Federal Official Where Filed:

The offeror further certifies that the practices used in estimating costs in pricing this proposal are consistent with the cost accounting practices disclosed in the applicable Disclosure Statement.

☐ (3) Certificate of Monetary Exemption.

The offeror hereby certifies that the offeror, together with all divisions, subsidiaries, and affiliates under common control, did not receive net awards of negotiated prime contracts and subcontracts subject to CAS totaling \$50 million or more in the cost accounting period immediately preceding the period in which this proposal was submitted. The offeror further certifies that if such status changes before an award resulting from this proposal, the offeror will advise the Contracting Officer immediately.

☐ (4) Certificate of Interim Exemption.

The offeror hereby certifies that (i) the offeror first exceeded the monetary exemption for disclosure, as defined in (3) of this subsection, in the cost accounting period immediately preceding the period in which this offer was submitted and (ii) in accordance with 48 CFR 9903.202-1, the offeror is not yet required to submit a Disclosure Statement. The offeror further certifies that if an award resulting from this proposal has not been made within 90 days after the end of that period, the offeror will immediately submit a revised certificate to the Contracting Officer, in the form specified under subparagraph (c)(1) or (c)(2) of Part I of this provision, as appropriate, to verify submission of a completed Disclosure Statement.

CAUTION: Offerors currently required to disclose because they were awarded a CAS-covered prime contract or subcontract of \$50 million or more in the current cost accounting period may not claim this exemption (4). Further, the exemption applies only in connection with proposals submitted before expiration of the 90-day period following the cost accounting period in which the monetary exemption was exceeded.

II. COST ACCOUNTING STANDARDS--ELIGIBILITY FOR MODIFIED CONTRACT COVERAGE

If the offeror is eligible to use the modified provisions of 48 CFR 9903.201-2(b) and elects to do so, the offeror shall indicate by checking the box below. Checking the box below shall mean that the resultant contract is subject to the Disclosure and Consistency of Cost Accounting Practices clause in lieu of the Cost Accounting Standards clause.

☐ The offeror hereby claims an exemption from the Cost Accounting Standards clause under the provisions of 48 CFR 9903.201-2(b) and certifies that the offeror is eligible for use of the Disclosure and Consistency of Cost Accounting Practices clause because during the cost accounting period immediately preceding the period in which this proposal was submitted, the offeror received less than \$50 million in awards of CAS-covered prime contracts and subcontracts. The offeror further certifies that if such status changes before an award resulting from this proposal, the offeror will advise the Contracting Officer immediately.

CAUTION: An offeror may not claim the above eligibility for modified contract coverage if this proposal is expected to result in the award of a CAS-covered contract of \$50 million or more or if, during its current cost accounting period, the offeror has been awarded a single CAS-covered prime contract or subcontract of \$50 million or more.

III. ADDITIONAL COST ACCOUNTING STANDARDS APPLICABLE TO EXISTING CONTRACTS

The offeror shall indicate below whether award of the contemplated contract would, in accordance with subparagraph (a)(3) of the Cost Accounting Standards clause, require a change in established cost accounting practices affecting existing contracts and subcontracts.

☐ YES ☐ NO
(End of provision)

80. *FAR 52.230-2 COST ACCOUNTING STANDARDS (APR 1998)

(a) Unless the contract is exempt under 48 CFR 9903.201-1 and 9903.201-2, the provisions of 48 CFR Part 9903 are incorporated herein by reference and the Contractor, in connection with this contract, shall--

(1) (CAS-covered Contracts Only) By submission of a Disclosure Statement, disclose in writing the Contractor's cost accounting practices as required by 48 CFR 9903.202-1 through 9903.202-5, including methods of distinguishing direct costs from indirect costs and the basis used for allocating indirect costs. The practices disclosed for this contract shall be the same as the practices currently disclosed and applied on all other contracts and subcontracts being performed by the Contractor and which contain a Cost Accounting Standards (CAS) clause. If the Contractor has notified the Contracting Officer that the Disclosure Statement contains trade secrets and commercial or financial information which is privileged and confidential, the Disclosure Statement shall be protected and shall not be released outside of the Government.

(2) Follow consistently the Contractor's cost accounting practices in accumulating and reporting contract performance cost data concerning this contract. If any change in cost accounting practices is made for the purposes of any contract or subcontract subject to CAS requirements, the change must be applied prospectively to this contract and the Disclosure Statement must be amended accordingly. If the contract price or cost allowance of this contract is affected by such changes, adjustment shall be made in accordance with subparagraph (a)(4) or (a)(5) of this clause, as appropriate.

(3) Comply with all CAS, including any modifications and interpretations indicated thereto contained in 48 CFR Part 9904, in effect on the date of award of this contract or, if the Contractor has submitted cost or pricing data, on the date of final agreement on price as shown on the Contractor's signed certificate of current cost or pricing data. The Contractor shall also comply with any CAS (or modifications to CAS) which hereafter become applicable to a contract or subcontract of the Contractor. Such compliance shall be required prospectively from the date of applicability to such contract or subcontract.

(4)(i) Agree to an equitable adjustment as provided in the Changes clause of this contract if the contract cost is affected by a change which, pursuant to subparagraph (a)(3) of this clause, the Contractor is required to make to the Contractor's established cost accounting practices.

(ii) Negotiate with the Contracting Officer to determine the terms and conditions under which a change may be made to a cost accounting practice, other than a change made under other provisions of subparagraph (a)(4) of this clause; provided that no agreement may be made under this provision that will increase costs paid by the United States.

(iii) When the parties agree to a change to a cost accounting practice, other than a change under subdivision (a)(4)(i) of this clause, negotiate an equitable adjustment as provided in the Changes clause of this contract.

(5) Agree to an adjustment of the contract price or cost allowance, as appropriate, if the Contractor or a subcontractor fails to comply with an applicable Cost Accounting Standard, or to follow any cost accounting practice consistently and such failure results in any increased costs paid by the United States. Such adjustment shall provide for recovery of the increased costs to the United States, together with interest thereon computed at the annual rate established under section 6621 of the Internal Revenue Code of 1986 (26 U.S.C. 6621) for such period, from the time the payment by the United States was made to the time the adjustment is effected. In no case shall the Government recover costs greater than the increased cost to the Government, in the aggregate, on the relevant contracts subject to the price adjustment, unless the Contractor made a change in its cost accounting practices of which it was aware or should have been aware at the time of price negotiations and which it failed to disclose to the Government.

(b) If the parties fail to agree whether the Contractor or a subcontractor has complied with an applicable CAS in 48 CFR 9904 or a CAS rule or regulation in 48 CFR 9903 and as to any cost adjustment demanded by the United States, such failure to agree will constitute a dispute under the Contract Disputes Act (41 U.S.C. 601).

(c) The Contractor shall permit any authorized representatives of the Government to examine and make copies of any documents, papers, or records relating to compliance with the requirements of this clause.

(d) The Contractor shall include in all negotiated subcontracts which the Contractor enters into, the substance of this clause, except paragraph (b), and shall require such inclusion in all other subcontracts, of any tier, including the obligation to comply with all CAS in effect on the subcontractor's award date or if the subcontractor has submitted cost or pricing data, on the date of final agreement on price as shown on the subcontractor's signed Certificate of Current Cost or Pricing Data. If the subcontract is awarded to a business unit which pursuant to 48 CFR 9903.201-2 is subject to other types of CAS coverage, the substance of the applicable clause set forth in subsection 30.201-4 of the Federal Acquisition Regulation shall be inserted. This requirement shall apply only to negotiated subcontracts in excess of \$500,000, except that the requirement shall not apply to negotiated subcontracts otherwise exempt from the requirement to include a CAS clause as specified in 48 CFR 9903.201-1.

(End of clause)

81. *FAR 52.230-3 DISCLOSURE AND CONSISTENCY OF COST ACCOUNTING PRACTICES (APR 1998)

(a) The Contractor, in connection with this contract, shall--

(1) Comply with the requirements of 48 CFR 9904.401, Consistency in Estimating, Accumulating, and Reporting Costs; 48 CFR 9904.402, Consistency in Allocating Costs Incurred for the Same Purpose; 48 CFR 9904.405, Accounting for Unallowable Costs; and 48 CFR 9904.406, Cost Accounting Standard--Cost Accounting Period, in effect on the date of award of this contract as indicated in 48 CFR Part 9904.

(2) (CAS-covered Contracts Only) If it is a business unit of a company required to submit a Disclosure Statement, disclose in writing its cost accounting practices as required by 48 CFR 9903.202-1 through 9903.202-5. If the Contractor has notified the Contracting Officer that the Disclosure Statement contains trade secrets and commercial or financial information which is privileged and confidential, the Disclosure Statement shall be protected and shall not be released outside of the Government.

(3)(i) Follow consistently the Contractor's cost accounting practices. A change to such practices may be proposed, however, by either the Government or the Contractor, and the Contractor agrees to negotiate with the Contracting Officer the terms and conditions under which a change may be made. After the terms and conditions under which the change is to be made have been agreed to, the change must be applied prospectively to this contract, and the Disclosure Statement, if affected, must be amended accordingly.

(ii) The Contractor shall, when the parties agree to a change to a cost accounting practice and the Contracting Officer has made the finding required in 48 CFR 9903.201-6(b), that the change is desirable and not detrimental to the interests of the Government, negotiate an equitable adjustment as provided in the Changes clause of this contract. In the absence of the required finding, no agreement may be made under this contract clause that will increase costs paid by the United States.

(4) Agree to an adjustment of the contract price or cost allowance, as appropriate, if the Contractor or a subcontractor fails to comply with the applicable CAS or to follow any cost accounting practice, and such failure results in any increased costs paid by the United States. Such adjustment shall provide for recovery of the increased costs to the United States together with interest thereon computed at the annual rate of interest established under the Internal Revenue Code of 1986 (26 U.S.C. 6621), from the time the payment by the United States was made to the time the adjustment is effected.

(b) If the parties fail to agree whether the Contractor has complied with an applicable CAS, rule, or regulation as specified in 48 CFR 9903 and 9904 and as to any cost adjustment demanded by the United States, such failure to agree will constitute a dispute under the Contract Disputes Act (41 U.S.C. 601).

(c) The Contractor shall permit any authorized representatives of the Government to examine and make copies of any documents, papers, and records relating to compliance with the requirements of this clause.

(d) The Contractor shall include in all negotiated subcontracts, which the Contractor enters into, the substance of this clause, except paragraph (b), and shall require such inclusion in all other subcontracts of any tier, except that--

(1) If the subcontract is awarded to a business unit which pursuant to 48 CFR 9903.201-2 is subject to other types of CAS coverage, the substance of the applicable clause set forth in subsection 30.201-4 of the Federal Acquisition Regulation shall be inserted.

(2) This requirement shall apply only to negotiated subcontracts in excess of \$500,000.

(3) The requirement shall not apply to negotiated subcontracts otherwise exempt from the requirement to include a CAS clause as specified in 48 CFR 9903.201-1.

(End of clause)

82. DFARS 252.231-7000 SUPPLEMENTAL COST PRINCIPLES (DEC 1991)

When the allowability of costs under this contract is determined in accordance with part 31 of the Federal Acquisition Regulation (FAR) allowability shall also be determined in accordance with part 231 of the DoD FAR Supplement, in effect on the date of this contract.

83. *FAR 52.232-5 PAYMENTS UNDER FIXED-PRICE CONSTRUCTION CONTRACTS (SEPT 2002)

(a) Payment of Price. The Government shall pay the Contractor the contract price as provided in this contract.

(b) Progress Payments. The Government shall make progress payments monthly as the work proceeds, or at more frequent intervals as determined by the Contracting Officer, on estimates of work accomplished which meets the standards of quality established under the contract, as approved by the Contracting Officer.

(1) The Contractor's request for progress payments shall include the following substantiation:

(i) An itemization of the amounts requested, related to the various elements of work required by the contract covered by the payment requested.

(ii) A listing of the amount included for work performed by each subcontractor under the contract.

(iii) A listing of the total amount of each subcontract under the contract.

(iv) A listing of the amounts previously paid to each such subcontractor under the contract.

(v) Additional supporting data in a form and detail required by the Contracting Officer.

(2) In the preparation of estimates, the Contracting Officer may authorize material delivered on the site and preparatory work done to be taken into consideration. Material delivered to the Contractor at locations other than the site also may be taken into consideration if--

(i) Consideration is specifically authorized by this contract; and

(ii) The Contractor furnishes satisfactory evidence that it has acquired title to such material and that the material will be used to perform this contract.

(c) Contractor Certification. Along with each request for progress payments, the Contractor shall furnish the following certification, or payment shall not be made: (However, if the Contractor elects to delete paragraph (c)(4) from the certification, the certification is still acceptable.) I hereby certify, to the best of my knowledge and belief, that--

(1) The amounts requested are only for performance in accordance with the specifications, terms, and conditions of the contract;

(2) All payments due to subcontractors and suppliers from previous payments received under the contract have been made, and timely payments will be made from the proceeds of the payment covered by this certification, in accordance with subcontract agreements and the requirements of chapter 39 of Title 31, United States Code;

(3) This request for progress payments does not include any amounts which the prime contractor intends to withhold or retain from a subcontractor or supplier in accordance with the terms and conditions of the subcontract; and

(4) This certification is not to be construed as final acceptance of a subcontractor's performance.

(Name)

(Title)

(Date)

(d) Refund of Unearned Amounts. If the Contractor, after making a certified request for progress payments, discovers that a portion or all of such request constitutes a payment for performance by the Contractor that fails to conform to the specifications, terms, and conditions of this contract (hereinafter referred to as the "unearned amount"), the Contractor shall--

(1) Notify the Contracting Officer of such performance deficiency; and

(2) Be obligated to pay the Government an amount (computed by the Contracting Officer in the manner provided in paragraph (j) of this clause) equal to interest on the unearned amount from the 8th day after the date of receipt of the unearned amount until--

(i) The date the Contractor notifies the Contracting Officer that the performance deficiency has been corrected; or

(ii) The date the Contractor reduces the amount of any subsequent certified request for progress payments by an amount equal to the unearned amount.

(e) Retainage. If the Contracting Officer finds that satisfactory progress was achieved during any period for which a progress payment is to be made, the Contracting Officer shall authorize payment to be made in full. However, if satisfactory progress has not been made, the Contracting Officer may retain a maximum of 10 percent of the amount of the payment until satisfactory progress is achieved. When the work is substantially complete, the Contracting Officer may retain from previously withheld funds and future progress payments that amount the Contracting Officer considers adequate for protection of the Government and shall release to the Contractor all the remaining withheld funds. Also, on completion and acceptance of each separate building, public

work, or other division of the contract, for which the price is stated separately in the contract, payment shall be made for the completed work without retention of a percentage.

(f) Title, Liability, and Reservation of Rights. All material and work covered by progress payments made shall, at the time of payment, become the sole property of the Government, but this shall not be construed as--

(1) Relieving the Contractor from the sole responsibility for all material and work upon which payments have been made or the restoration of any damaged work; or

(2) Waiving the right of the Government to require the fulfillment of all of the terms of the contract.

(g) Reimbursement for Bond Premiums. In making these progress payments, the Government shall, upon request, reimburse the Contractor for the amount of premiums paid for performance and payment bonds (including coinsurance and reinsurance agreements, when applicable) after the Contractor has furnished evidence of full payment to the surety. The retainage provisions in paragraph (e) of this clause shall not apply to that portion of progress payments attributable to bond premiums.

(h) Final Payment. The Government shall pay the amount due the Contractor under this contract after--

(1) Completion and acceptance of all work;

(2) Presentation of a properly executed voucher; and

(3) Presentation of release of all claims against the Government arising by virtue of this contract, other than claims, in stated amounts, that the Contractor has specifically excepted from the operation of the release. A release may also be required of the assignee if the Contractor's claim to amounts payable under this contract has been assigned under the Assignment of Claims Act of 1940 (31 U.S.C. 3727 and 41 U.S.C. 15).

(i) Limitation Because of Unfinalized Work. Notwithstanding any provision of this contract, progress payments shall not exceed 80 percent on work accomplished on unfinalized contract actions. A "contract action" is any action resulting in a contract, as defined in FAR Subpart 2.1, including contract modifications for additional supplies or services, but not including contract modifications that are within the scope and under the terms of the contract, such as contract modifications issued pursuant to the Changes clause, or funding and other administrative changes.

(j) Interest Computation on Unearned Amounts. In accordance with 31 U.S.C. 3903(c)(1), the amount payable under subparagraph (d)(2) of this clause shall be--

(1) Computed at the rate of average bond equivalent rates of 91-day Treasury bills auctioned at the most recent auction of such bills prior to the date the Contractor receives the unearned amount; and

(2) Deducted from the next available payment to the Contractor.

84. RESERVED.

85. *FAR 52.232-10 PAYMENTS UNDER FIXED-PRICE ARCHITECT-ENGINEER CONTRACTS (AUG 1987)

(a) Estimates shall be made monthly of the amount and value of the work and services performed by the Contractor under this contract which meet the standards of quality established under this contract. The estimates shall be prepared by the Contractor and accompanied by any supporting data required by the Contracting Officer.

(b) Upon approval of the estimate by the Contracting Officer, payment upon properly executed vouchers shall be made to the Contractor, as soon as practicable, of 90 percent of the approved amount, less all previous payments; provided, that payment may be made in full during any months in which the Contracting Officer determines that performance has been satisfactory. Also, whenever the Contracting Officer determines that the work is substantially complete and that the amount retained is in excess of the amount adequate for the protection of the Government, the Contracting Officer may release the excess amount to the Contractor.

(c) Upon satisfactory completion by the Contractor and acceptance by the Contracting Officer of the work done by the Contractor under the "Statement of Architect-Engineer Services", the Contractor will be paid the unpaid balance of any money due for work under the statement, including retained percentages relating to this portion of the work. Upon satisfactory completion and final acceptance of the construction work, the Contractor shall be paid any unpaid balance of money due under this contract.

(d) Before final payment under the contract, or before settlement upon termination of the contract, and as a condition precedent thereto, the Contractor shall execute and deliver to the Contracting Officer a release of all claims against the Government arising under or by virtue of this contract, other than any claims that are specifically excepted by the Contractor from the operation of the release in amounts stated in the release.

(e) Notwithstanding any other provision in this contract, and specifically paragraph (b) of this clause, progress payments shall not exceed 80 percent on work accomplished on undefinitized contract actions. A "contract action" is any action resulting in a contract, as defined in FAR Subpart 2.1, including contract modifications for additional supplies or services, but not including contract modifications that are within the scope and under the terms of the contract, such as contract modifications issued pursuant to the Changes clause, or funding and other administrative changes. (End of clause)

86. *FAR 52.232-17 INTEREST (JUN 1996)

(a) Except as otherwise provided in this contract under a Price Reduction for Defective Cost or Pricing Data clause or a Cost Accounting Standards clause, all amounts that become payable by the Contractor to the Government under this contract (net of any applicable tax credit under the Internal Revenue Code (26 U.S.C. 1481)) shall bear simple interest from the date due until paid unless paid within 30 days of becoming due. The interest rate shall be the interest rate established by the Secretary of the Treasury as provided in Section 12 of the Contract Disputes Act of 1978 (Public Law 95-563), which is applicable to the period in which the amount becomes due, as provided in paragraph (b) of this clause, and then at the rate applicable for each six-month period as fixed by the Secretary until the amount is paid.

(b) Amounts shall be due at the earliest of the following dates:

(1) The date fixed under this contract.

(2) The date of the first written demand for payment consistent with this contract, including any demand resulting from a default termination.

(3) The date the Government transmits to the Contractor a proposed supplemental agreement to confirm completed negotiations establishing the amount of debt.

(4) If this contract provides for revision of prices, the date of written notice to the Contractor stating the amount of refund payable in connection with a pricing proposal or a negotiated pricing agreement not confirmed by contract modification.

(c) The interest charge made under this clause may be reduced under the procedures prescribed in 32.614-2 of the Federal Acquisition Regulation in effect on the date of this contract.

87. *FAR 52.232-23 ASSIGNMENT OF CLAIMS (JAN 1986)

(a) The Contractor, under the Assignment of Claims Act, as amended, 31 U.S.C. 3727, 41 U.S.C. 15 (hereafter referred to as "the Act"), may assign its rights to be paid amounts due or to become due as a result of the performance of this contract to a bank, trust company, or other financing institution, including any Federal lending agency. The assignee under such an assignment may thereafter further assign or reassign its right under the original assignment to any type of financing institution described in the preceding sentence.

(b) Any assignment or reassignment authorized under the Act and this clause shall cover all unpaid amounts payable under this contract, and shall not be made to more than one party, except that an assignment or reassignment may be made to one party as agent or trustee for two or more parties participating in the financing of this contract.

(c) The Contractor shall not furnish or disclose to any assignee under this contract any classified document (including this contract) or information related to work under this contract until the Contracting Officer authorizes such action in writing.

88. *FAR 52.232-26 PROMPT PAYMENT FOR FIXED-PRICE ARCHITECT-ENGINEER CONTRACTS (FEB 2002)

Notwithstanding any other payment terms in this contract, the Government will make invoice payments under the terms and conditions specified in this clause. The Government considers payment as being made on the day a check is dated or the date of an electronic funds transfer. Definitions of pertinent terms are set forth in sections 2.101, 32.001, and 32.902 of the Federal Acquisition Regulation. All days referred to in this clause are calendar days, unless otherwise specified. (However, see paragraph (a)(3) of this clause concerning payments due on Saturdays, Sundays, and legal holidays.)

(a) *Invoice payments*—(1) *Due date*. The due date for making invoice payments is—

(i) For work or services completed by the Contractor, the later of the following two events:

(A) The 30th day after the designated billing office receives a proper invoice from the Contractor (except as provided in paragraph (a)(1)(iii) of this clause).

(B) The 30th day after Government acceptance of the work or services completed by the Contractor. For a final invoice, when the payment amount is subject to contract settlement actions (e.g., release of claims), acceptance is deemed to occur on the effective date of the settlement.

(ii) The due date for progress payments is the 30th day after Government approval of Contractor estimates of work or services accomplished.

(iii) If the designated billing office fails to annotate the invoice or payment request with the actual date of receipt at the time of receipt, the payment due date is the 30th day after the date of the Contractor's invoice or payment request, provided the designated billing office receives a proper invoice or payment request and there is no disagreement over quantity, quality, or Contractor compliance with contract requirements.

(2) *Contractor's invoice*. The Contractor shall prepare and submit invoices to the designated billing office specified in the contract. A proper invoice must include the items listed in paragraphs (a)(2)(i) through (a)(2)(x) of this clause. If the invoice does not comply with these requirements, the designated billing office will return it within 7 days after receipt, with the reasons why it is not a proper invoice. When computing any interest penalty owed the Contractor, the Government will take into account if the Government notifies the Contractor of an improper invoice in an untimely manner.

(i) Name and address of the Contractor.

(ii) Invoice date and invoice number. (The Contractor should date invoices as close as possible to the date of mailing or transmission.)

(iii) Contract number or other authorization for work or services performed (including order number and contract line item number).

(iv) Description of work or services performed.

(v) Delivery and payment terms (e.g., discount for prompt payment terms).

(vi) Name and address of Contractor official to whom payment is to be sent (must be the same as that in the contract or in a proper notice of assignment).

(vii) Name (where practicable), title, phone number, and mailing address of person to notify in the event of a defective invoice.

(viii) Taxpayer Identification Number (TIN). The Contractor shall include its TIN on the invoice only if required elsewhere in this contract.

(ix) Electronic funds transfer (EFT) banking information.

(A) The Contractor shall include EFT banking information on the invoice only if required elsewhere in this contract.

(B) If EFT banking information is not required to be on the invoice, in order for the invoice to be a proper invoice, the Contractor shall have submitted correct EFT banking information in accordance with the applicable solicitation provision (e.g., 52.232–38, Submission of Electronic Funds Transfer Information with Offer), contract clause (e.g., 52.232–33, Payment by Electronic Funds Transfer—Central Contractor Registration, or 52.232–34, Payment by Electronic Funds Transfer—Other Than Central Contractor Registration), or applicable agency procedures.

(C) EFT banking information is not required if the Government waived the requirement to pay by EFT.

(x) Any other information or documentation required by the contract.

(3) *Interest penalty.* The designated payment office will pay an interest penalty automatically, without request from the Contractor, if payment is not made by the due date and the conditions listed in paragraphs (a)(3)(i) through (a)(3)(iii) of this clause are met, if applicable. However, when the due date falls on a Saturday, Sunday, or legal holiday, the designated payment office may make payment on the following working day without incurring a late payment interest penalty.

(i) The designated billing office received a proper invoice.

(ii) The Government processed a receiving report or other Government documentation authorizing payment and there was no disagreement over quantity, quality, Contractor compliance with any contract term or condition, or requested progress payment amount.

(iii) In the case of a final invoice for any balance of funds due the Contractor for work or services performed, the amount was not subject to further contract settlement actions between the Government and the Contractor.

(4) *Computing penalty amount.* The Government will compute the interest penalty in accordance with the Office of Management and Budget prompt payment regulations at 5 CFR part 1315.

(i) For the sole purpose of computing an interest penalty that might be due the Contractor, Government acceptance or approval is deemed to occur constructively as shown in paragraphs (a)(4)(i)(A) and (B) of this clause. If actual acceptance or approval occurs within the constructive acceptance or approval period, the Government will base the determination of an interest penalty on the actual date of acceptance or approval. Constructive acceptance or constructive approval requirements do not apply if there is a disagreement over quantity, quality, Contractor compliance with a contract provision, or requested progress payment amounts. These requirements also do not compel Government officials to accept work or services, approve Contractor estimates, perform contract administration functions, or make payment prior to fulfilling their responsibilities.

(A) For work or services completed by the Contractor, Government acceptance is deemed to occur constructively on the 7th day after the Contractor completes the work or services in accordance with the terms and conditions of the contract.

(B) For progress payments, Government approval is deemed to occur on the 7th day after the designated billing office receives the Contractor estimates.

(ii) The prompt payment regulations at 5 CFR 1315.10(c) do not require the Government to pay interest penalties if payment delays are due to disagreement between the Government and the Contractor over the payment amount or other issues involving contract compliance, or on amounts temporarily withheld or retained in accordance with the terms of the contract. The Government and the Contractor shall resolve claims involving disputes, and any interest that may be payable in accordance with the clause at FAR 52.233-1, Disputes.

(5) *Discounts for prompt payment.* The designated payment office will pay an interest penalty automatically, without request from the Contractor, if the Government takes a discount for prompt payment improperly. The Government will calculate the interest penalty in accordance with 5 CFR part 1315.

(6) *Additional interest penalty*

(i) The designated payment office will pay a penalty amount, calculated in accordance with the prompt payment regulations at 5 CFR part 1315, in addition to the interest penalty amount only if—

(A) The Government owes an interest penalty of \$1 or more;

(B) The designated payment office does not pay the interest penalty within 10 days after the date the invoice amount is paid; and

(C) The contractor makes a written demand to the designated payment office for additional penalty payment, in accordance with paragraph (a)(6)(ii) of this clause, postmarked not later than 40 days after the date the invoice amount is paid.

(ii)(A) The Contractor shall support written demands for additional penalty payments with the following data. The Government will not request any additional data. The Contractor shall—

(1) Specifically assert that late payment interest is due under a specific invoice, and request payment of all overdue late payment interest penalty and such additional penalty as may be required;

(2) Attach a copy of the invoice on which the unpaid late payment interest is due; and

(3) State that payment of the principal has been received, including the date of receipt.

(B) If there is no postmark or the postmark is illegible—

(1) The designated payment office that receives the demand will annotate it with the date of receipt, provided the demand is received on or before the 40th day after payment was made; or

(2) If the designated payment office fails to make the required annotation, the Government will determine the demand's validity based on the date the Contractor has placed on the demand, provided such date is no later than the 40th day after payment was made.

(iii) The additional penalty does not apply to payments regulated by other Government regulations (*e.g.*, payments under utility contracts subject to tariffs and regulation).

(b) *Contract financing payments.* If this contract provides for contract financing, the Government will make contract financing payments in accordance with the applicable contract financing clause.

(c) *Overpayments.* If the Contractor becomes aware of a duplicate payment or that the Government has otherwise overpaid on an invoice payment, the Contractor shall immediately notify the Contracting Officer and request instructions for disposition of the overpayment. (End of clause)

89. *FAR 52.232-27 PROMPT PAY FOR CONSTRUCTION CONTRACTS (FEB 2002)

Notwithstanding any other payment terms in this contract, the Government will make invoice payments under the terms and conditions specified in this clause. The Government considers payment as being made on the day a check is dated or the date of an electronic funds transfer. Definitions of pertinent terms are set forth in sections 2.101, 32.001, and 32.902 of the Federal Acquisition Regulation. All days referred to in this clause are calendar days, unless otherwise specified. (However, see paragraph (a)(3) concerning payments due on Saturdays, Sundays, and legal holidays.)

(a) *Invoice payments*—(1) *Types of invoice payments.* For purposes of this clause, there are several types of invoice payments that may occur under this contract, as follows:

(i) Progress payments, if provided for elsewhere in this contract, based on Contracting Officer approval of the estimated amount and value of work or services performed, including payments for reaching milestones in any project.

(A) The due date for making such payments is 14 days after the designated billing office receives a proper payment request. If the designated billing office fails to annotate the payment request with the actual date of receipt at the time of receipt, the payment due date is the 14th day after the date of the Contractor's payment request, provided the designated billing office receives a proper payment request and there is no disagreement over quantity, quality, or Contractor compliance with contract requirements.

(B) The due date for payment of any amounts retained by the Contracting Officer in accordance with the clause at 52.232-5, Payments Under Fixed-Price Construction Contracts, is as specified in the contract or, if not specified, 30 days after approval by the Contracting Officer for release to the Contractor.

(ii) Final payments based on completion and acceptance of all work and presentation of release of all claims against the Government arising by virtue of the contract, and payments for partial deliveries that have been accepted by the Government (*e.g.*, each separate building, public work, or other division of the contract for which the price is stated separately in the contract).

(A) The due date for making such payments is the later of the following two events:

(1) The 30th day after the designated billing office receives a proper invoice from the Contractor.

(2) The 30th day after Government acceptance of the work or services completed by the Contractor. For a final invoice when the payment amount is subject to contract settlement actions (*e.g.*, release of claims), acceptance is deemed to occur on the effective date of the contract settlement.

(B) If the designated billing office fails to annotate the invoice with the date of actual receipt at the time of receipt, the invoice payment due date is the 30th day after the date of the Contractor's

invoice, provided the designated billing office receives a proper invoice and there is no disagreement over quantity, quality, or Contractor compliance with contract requirements.

(2) *Contractor's invoice.* The Contractor shall prepare and submit invoices to the designated billing office specified in the contract. A proper invoice must include the items listed in paragraphs (a)(2)(i) through (a)(2)(xi) of this clause. If the invoice does not comply with these requirements, the designated billing office must return it within 7 days after receipt, with the reasons why it is not a proper invoice. When computing any interest penalty owed the Contractor, the Government will take into account if the Government notifies the Contractor of an improper invoice in an untimely manner.

(i) Name and address of the Contractor.

(ii) Invoice date and invoice number. (The Contractor should date invoices as close as possible to the date of mailing or transmission.)

(iii) Contract number or other authorization for work or services performed (including order number and contract line item number).

(iv) Description of work or services performed.

(v) Delivery and payment terms (e.g., discount for prompt payment terms).

(vi) Name and address of Contractor official to whom payment is to be sent (must be the same as that in the contract or in a proper notice of assignment).

(vii) Name (where practicable), title, phone number, and mailing address of person to notify in the event of a defective invoice.

(viii) For payments described in paragraph (a)(1)(i) of this clause, substantiation of the amounts requested and certification in accordance with the requirements of the clause at 52.232–5, Payments Under Fixed-Price Construction Contracts.

(ix) Taxpayer Identification Number (TIN). The Contractor shall include its TIN on the invoice only if required elsewhere in this contract.

(x) Electronic funds transfer (EFT) banking information.

(A) The Contractor shall include EFT banking information on the invoice only if required elsewhere in this contract.

(B) If EFT banking information is not required to be on the invoice, in order for the invoice to be a proper invoice, the Contractor shall have submitted correct EFT banking information in accordance with the applicable solicitation provision (e.g., 52.232–38, Submission of Electronic Funds Transfer Information with Offer), contract clause (e.g., 52.232–33, Payment by Electronic Funds Transfer—Central Contractor Registration, or 52.232–34, Payment by Electronic Funds Transfer—Other Than Central Contractor Registration), or applicable agency procedures.

(C) EFT banking information is not required if the Government waived the requirement to pay by EFT.

(xi) Any other information or documentation required by the contract.

(3) *Interest penalty.* The designated payment office will pay an interest penalty automatically, without request from the Contractor, if payment is not made by the due date and the conditions listed in paragraphs (a)(3)(i) through (a)(3)(iii) of this clause are met, if applicable. However, when the due date falls on a Saturday, Sunday, or legal holiday, the designated payment office may make payment on the following working day without incurring a late payment interest penalty.

(i) The designated billing office received a proper invoice.

(ii) The Government processed a receiving report or other Government documentation authorizing payment and there was no disagreement over quantity, quality, Contractor compliance with any contract term or condition, or requested progress payment amount.

(iii) In the case of a final invoice for any balance of funds due the Contractor for work or services performed, the amount was not subject to further contract settlement actions between the Government and the Contractor.

(4) *Computing penalty amount.* The Government will compute the interest penalty in accordance with the Office of Management and Budget prompt payment regulations at 5 CFR part 1315.

(i) For the sole purpose of computing an interest penalty that might be due the Contractor for payments described in paragraph (a)(1)(ii) of this clause, Government acceptance or approval is deemed to occur constructively on the 7th day after the Contractor has completed the work or services in accordance with the terms and conditions of the contract. If actual acceptance or approval occurs within the constructive

acceptance or approval period, the Government will base the determination of an interest penalty on the actual date of acceptance or approval. Constructive acceptance or constructive approval requirements do not apply if there is a disagreement over quantity, quality, or Contractor compliance with a contract provision. These requirements also do not compel Government officials to accept work or services, approve Contractor estimates, perform contract administration functions, or make payment prior to fulfilling their responsibilities.

(ii) The prompt payment regulations at 5 CFR 1315.10(c) do not require the Government to pay interest penalties if payment delays are due to disagreement between the Government and the Contractor over the payment amount or other issues involving contract compliance, or on amounts temporarily withheld or retained in accordance with the terms of the contract. The Government and the Contractor shall resolve claims involving disputes, and any interest that may be payable in accordance with the clause at FAR 52.233-1, Disputes.

(5) *Discounts for prompt payment.* The designated payment office will pay an interest penalty automatically, without request from the Contractor, if the Government takes a discount for prompt payment improperly. The Government will calculate the interest penalty in accordance with the prompt payment regulations at 5 CFR part 1315.

(6) *Additional interest penalty.* (i) The designated payment office will pay a penalty amount, calculated in accordance with the prompt payment regulations at 5 CFR part 1315 in addition to the interest penalty amount only if—

(A) The Government owes an interest penalty of \$1 or more;

(B) The designated payment office does not pay the interest penalty within 10 days after the date the invoice amount is paid; and

(C) The Contractor makes a written demand to the designated payment office for additional penalty payment, in accordance with paragraph (a)(6)(ii) of this clause, postmarked not later than 40 days after the date the invoice amount is paid.

(ii)(A) The Contractor shall support written demands for additional penalty payments with the following data. The Government will not request any additional data. The Contractor shall—

(1) Specifically assert that late payment interest is due under a specific invoice, and request payment of all overdue late payment interest penalty and such additional penalty as may be required;

(2) Attach a copy of the invoice on which the unpaid late payment interest was due; and

(3) State that payment of the principal has been received, including the date of receipt.

(B) If there is no postmark or the postmark is illegible—

(1) The designated payment office that receives the demand will annotate it with the date of receipt provided the demand is received on or before the 40th day after payment was made; or

(2) If the designated payment office fails to make the required annotation, the Government will determine the demand's validity based on the date the Contractor has placed on the demand, provided such date is no later than the 40th day after payment was made.

(b) *Contract financing payments.* If this contract provides for contract financing, the Government will make contract financing payments in accordance with the applicable contract financing clause.

(c) *Subcontract clause requirements.* The Contractor shall include in each subcontract for property or services (including a material supplier) for the purpose of performing this contract the following:

(1) *Prompt payment for subcontractors.* A payment clause that obligates the Contractor to pay the subcontractor for satisfactory performance under its subcontract not later than 7 days from receipt of payment out of such amounts as are paid to the Contractor under this contract.

(2) *Interest for subcontractors.* An interest penalty clause that obligates the Contractor to pay to the subcontractor an interest penalty for each payment not made in accordance with the payment clause—

(i) For the period beginning on the day after the required payment date and ending on the date on which payment of the amount due is made; and

(ii) Computed at the rate of interest established by the Secretary of the Treasury, and published in the **Federal Register**, for interest payments under section 12 of the Contract Disputes Act of 1978 (41 U.S.C. 611) in effect at the time the Contractor accrues the obligation to pay an interest penalty.

(3) *Subcontractor clause flowdown.* A clause requiring each subcontractor to

- (i) Include a payment clause and an interest penalty clause conforming to the standards set forth in paragraphs (c)(1) and (c)(2) of this clause in each of its subcontracts; and
- (ii) Require each of its subcontractors to include such clauses in their subcontracts with each lower-tier subcontractor or supplier.

(d) *Subcontract clause interpretation.* The clauses required by paragraph (c) of this clause shall not be construed to impair the right of the Contractor or a subcontractor at any tier to negotiate, and to include in their subcontract, provisions that—

(1) *Retainage permitted.* Permit the Contractor or a subcontractor to retain (without cause) a specified percentage of each progress payment otherwise due to a subcontractor for satisfactory performance under the subcontract without incurring any obligation to pay a late payment interest penalty, in accordance with terms and conditions agreed to by the parties to the subcontract, giving such recognition as the parties deem appropriate to the ability of a subcontractor to furnish a performance bond and a payment bond;

(2) *Withholding permitted.* Permit the Contractor or subcontractor to make a determination that part or all of the subcontractor's request for payment may be withheld in accordance with the subcontract agreement; and

(3) *Withholding requirements.* Permit such withholding without incurring any obligation to pay a late payment penalty if—

(i) A notice conforming to the standards of paragraph (g) of this clause previously has been furnished to the subcontractor; and

(ii) The Contractor furnishes to the Contracting Officer a copy of any notice issued by a Contractor pursuant to paragraph (d)(3)(i) of this clause.

(e) *Subcontractor withholding procedures.* If a Contractor, after making a request for payment to the Government but before making a payment to a subcontractor for the subcontractor's performance covered by the payment request, discovers that all or a portion of the payment otherwise due such subcontractor is subject to withholding from the subcontractor in accordance with the subcontract agreement, then the Contractor shall—

(1) *Subcontractor notice.* Furnish to the subcontractor a notice conforming to the standards of paragraph (g) of this clause as soon as practicable upon ascertaining the cause giving rise to a withholding, but prior to the due date for subcontractor payment;

(2) *Contracting Officer notice.* Furnish to the Contracting Officer, as soon as practicable, a copy of the notice furnished to the subcontractor pursuant to paragraph (e)(1) of this clause;

(3) *Subcontractor progress payment reduction.* Reduce the subcontractor's progress payment by an amount not to exceed the amount specified in the notice of withholding furnished under paragraph (e)(1) of this clause;

(4) *Subsequent subcontractor payment.* Pay the subcontractor as soon as practicable after the correction of the identified subcontract performance deficiency, and—

(i) Make such payment within—

(A) Seven days after correction of the identified subcontract performance deficiency (unless the funds therefor must be recovered from the Government because of a reduction under paragraph (e)(5)(i) of this clause; or

(B) Seven days after the Contractor recovers such funds from the Government;

or

(ii) Incur an obligation to pay a late payment interest penalty computed at the rate of interest established by the Secretary of the Treasury, and published in the **Federal Register**, for interest payments under section 12 of the Contracts Disputes Act of 1978 (41 U.S.C. 611) in effect at the time the Contractor accrues the obligation to pay an interest penalty;

(5) *Notice to Contracting Officer.* Notify the Contracting Officer upon—

(i) Reduction of the amount of any subsequent certified application for payment; or

(ii) Payment to the subcontractor of any withheld amounts of a progress payment, specifying—

(A) The amounts withheld under paragraph (e)(1) of this clause; and

(B) The dates that such withholding began and ended; and

(6) *Interest to Government.* Be obligated to pay to the Government an amount equal to interest on the withheld payments (computed in the manner provided in 31 U.S.C. 3903(c)(1)), from the 8th day after receipt of

the withheld amounts from the Government until—

- (i) The day the identified subcontractor performance deficiency is corrected; or
- (ii) The date that any subsequent payment is reduced under paragraph (e)(5)(i) of this

clause.

(f) *Third-party deficiency reports*—(1) *Withholding from subcontractor*. If a Contractor, after making payment to a first-tier subcontractor, receives from a supplier or subcontractor of the first-tier subcontractor (hereafter referred to as a “second-tier subcontractor”) a written notice in accordance with section 2 of the Act of August 24, 1935 (40 U.S.C. 270b, Miller Act), asserting a deficiency in such first-tier subcontractor’s performance under the contract for which the Contractor may be ultimately liable, and the Contractor determines that all or a portion of future payments otherwise due such first-tier subcontractor is subject to withholding in accordance with the subcontract agreement, the Contractor may, without incurring an obligation to pay an interest penalty under paragraph (e)(6) of this clause—

(i) Furnish to the first-tier subcontractor a notice conforming to the standards of paragraph (g) of this clause as soon as practicable upon making such determination; and

(ii) Withhold from the first-tier subcontractor’s next available progress payment or payments an amount not to exceed the amount specified in the notice of withholding furnished under paragraph (f)(1)(i) of this clause.

(2) *Subsequent payment or interest charge*. As soon as practicable, but not later than 7 days after receipt of satisfactory written notification that the identified subcontract performance deficiency has been corrected, the Contractor shall—

(i) Pay the amount withheld under paragraph (f)(1)(ii) of this clause to such first-tier subcontractor; or

(ii) Incur an obligation to pay a late payment interest penalty to such first-tier subcontractor computed at the rate of interest established by the Secretary of the Treasury, and published in the **Federal Register**, for interest payments under section 12 of the Contracts Disputes Act of 1978 (41 U.S.C. 611) in effect at the time the Contractor accrues the obligation to pay an interest penalty.

(g) *Written notice of subcontractor withholding*. The Contractor shall issue a written notice of any withholding to a subcontractor (with a copy furnished to the Contracting Officer), specifying—

(1) The amount to be withheld;

(2) The specific causes for the withholding under the terms of the subcontract; and

(3) The remedial actions to be taken by the subcontractor in order to receive payment of the amounts withheld.

(h) *Subcontractor payment entitlement*. The Contractor may not request payment from the Government of any amount withheld or retained in accordance with paragraph (d) of this clause until such time as the Contractor has determined and certified to the Contracting Officer that the subcontractor is entitled to the payment of such amount.

(i) *Prime-subcontractor disputes*. A dispute between the Contractor and subcontractor relating to the amount or entitlement of a subcontractor to a payment or a late payment interest penalty under a clause included in the subcontract pursuant to paragraph (c) of this clause does not constitute a dispute to which the Government is a party. The Government may not be interpleaded in any judicial or administrative proceeding involving such a dispute.

(j) *Preservation of prime-subcontractor rights*. Except as provided in paragraph (i) of this clause, this clause shall not limit or impair any contractual, administrative, or judicial remedies otherwise available to the Contractor or a subcontractor in the event of a dispute involving late payment or nonpayment by the Contractor or deficient subcontract performance or nonperformance by a subcontractor.

(k) *Non-recourse for prime contractor interest penalty*. The Contractor’s obligation to pay an interest penalty to a subcontractor pursuant to the clauses included in a subcontract under paragraph (c) of this clause shall not be construed to be an obligation of the Government for such interest penalty. A cost-reimbursement claim may not include any amount for reimbursement of such interest penalty.

(l) *Overpayments*. If the Contractor becomes aware of a duplicate payment or that the Government has otherwise overpaid on an invoice payment, the Contractor shall immediately notify the Contracting Officer and request instructions for disposition of the overpayment.

(End of clause)

90. *FAR 52.232-33 PAYMENT BY ELECTRONIC FUNDS TRANSFER –CENTRAL CONTRACTOR REGISTRATION (MAY 1999)

(a) *Method of payment.* (1) All payments by the Government under this contract shall be made by electronic funds transfer (EFT), except as provided in paragraph (a)(2) of this clause. As used in this clause, the term “EFT” refers to the funds transfer and may also include the payment information transfer.

(2) In the event the Government is unable to release one or more payments by EFT, the Contractor agrees to either—

(i) Accept payment by check or some other mutually agreeable method of payment; or

(ii) Request the Government to extend the payment due date until such time as the Government can make payment by EFT (but see paragraph (d) of this clause).

(b) *Contractor’s EFT information.* The Government shall make payment to the Contractor using the EFT information contained in the Central Contractor Registration (CCR) database. In the event that the EFT information changes, the Contractor shall be responsible for providing the updated information to the CCR database.

(c) *Mechanisms for EFT payment.* The Government may make payment by EFT through either the Automated Clearing House (ACH) network, subject to the rules of the National Automated Clearing House Association, or the Fedwire Transfer System. The rules governing Federal payments through the ACH are contained in 31 CFR part 210.

(d) *Suspension of payment.* If the Contractor’s EFT information in the CCR database is incorrect, then the Government need not make payment to the Contractor under this contract until correct EFT information is entered into the CCR database; and any invoice or contract financing request shall be deemed not to be a proper invoice for the purpose of prompt payment under this contract. The prompt payment terms of the contract regarding notice of an improper invoice and delays in accrual of interest penalties apply.

(e) *Contractor EFT arrangements.* If the Contractor has identified multiple payment receiving points (i.e., more than one remittance address and/or EFT information set) in the CCR database, and the Contractor has not notified the Government of the payment receiving point applicable to this contract, the Government shall make payment to the first payment receiving point (EFT information set or remittance address as applicable) listed in the CCR database.

(f) *Liability for uncompleted or erroneous transfers.* (1) If an uncompleted or erroneous transfer occurs because the Government used the Contractor’s EFT information incorrectly, the Government remains responsible for—

(i) Making a correct payment;

(ii) Paying any prompt payment penalty due; and

(iii) Recovering any erroneously directed funds.

(2) If an uncompleted or erroneous transfer occurs because the Contractor’s EFT information was incorrect, or was revised within 30 days of Government release of the EFT payment transaction instruction to the Federal Reserve System, and—

(i) If the funds are no longer under the control of the payment office, the Government is deemed to have made payment and the Contractor is responsible for recovery of any erroneously directed funds; or

(ii) If the funds remain under the control of the payment office, the Government shall not make payment, and the provisions of paragraph (d) of this clause shall apply.

(g) *EFT and prompt payment.* A payment shall be deemed to have been made in a timely manner in accordance with the prompt payment terms of this contract if, in the EFT payment transaction instruction released to the Federal Reserve System, the date specified for settlement of the payment is on or before the prompt payment due date, provided the specified payment date is a valid date under the rules of the Federal Reserve System.

(h) *EFT and assignment of claims.* If the Contractor assigns the proceeds of this contract as provided for in the assignment of claims terms of this contract, the Contractor shall require as a condition of any such assignment, that the assignee shall register in the CCR database and shall be paid by EFT in accordance with the terms of this clause. In all respects, the requirements of this clause shall apply to the assignee as if it were the Contractor. EFT information that shows the ultimate recipient of the transfer to be other than the Contractor, in the absence of a proper assignment of claims acceptable to the Government, is incorrect EFT information within the meaning of paragraph (d) of this clause.

(i) *Liability for change of EFT information by financial agent.* The Government is not liable for errors

resulting from changes to EFT information made by the Contractor's financial agent.

(j) *Payment information.* The payment or disbursing office shall forward to the Contractor available payment information that is suitable for transmission as of the date of release of the EFT instruction to the Federal Reserve System. The Government may request the Contractor to designate a desired format and method(s) for delivery of payment information from a list of formats and methods the payment office is capable of executing. However, the Government does not guarantee that any particular format or method of delivery is available at any particular payment office and retains the latitude to use the format and delivery method most convenient to the Government. If the Government makes payment by check in accordance with paragraph (a) of this clause, the Government shall mail the payment information to the remittance address contained in the CCR database.
(End of Clause)

91. DFARS 252.232-7004 DOD PROGRESS PAYMENT RATES (OCT 2001)

(a) If the contractor is a small business concern, the Progress Payments clause of this contract is modified to change each mention of the progress payment rate and liquidation rate (excepting paragraph (k), *Limitations on Unfinalized Contract Actions*) to 90 percent.

(b) If the contractor is a small disadvantaged business concern, the Progress Payments clause of this contract is modified to change each mention of the progress payment rate and liquidation rate (excepting paragraph (k), *Limitations on Unfinalized Contract Actions*) to 95 percent.
(End of clause)

**92. DFARS 252.232-7005 REIMBURSEMENT OF SUBCONTRACTOR ADVANCE PAYMENTS--
DOD PILOT MENTOR-PROTEGE PROGRAM (SEP 2001)**

(a) The Government will reimburse the Contractor for any advance payments made by the Contractor, as a mentor firm, to a protege firm, pursuant to an approved mentor-protege agreement, provided--

(1) The Contractor's subcontract with the protege firm includes a provision substantially the same as FAR 52.232-12, Advance Payments;

(2) The Contractor has administered the advance payments in accordance with the policies of FAR Subpart 32.4; and

(3) The Contractor agrees that any financial loss resulting from the failure or inability of the protege firm to repay any unliquidated advance payments is the sole financial responsibility of the Contractor.

(b) For a fixed price type contract, advance payments made to a protege firm shall be paid and administered as if they were 100 percent progress payments. The Contractor shall include as a separate attachment with each Standard Form (SF) 1443, Contractor's Request for Progress Payment, a request for reimbursement of advance payments made to a protege firm. The attachment shall provide a separate calculation of lines 14a through 14e of SF 1443 for each protege, reflecting the status of advance payments made to that protege.

(c) For cost reimbursable contracts, reimbursement of advance payments shall be made via public voucher. The Contractor shall show the amounts of advance payments made to each protege on the public voucher, in the form and detail directed by the cognizant contracting officer or contract auditor.
(End of clause)

93. *FAR 52.233-1 DISPUTES (JULY 2002)

(a) This contract is subject to the Contract Disputes Act of 1978, as amended (41 U.S.C. 601-613).

(b) Except as provided in the Act, all disputes arising under or relating to this contract shall be resolved under this clause.

(c) "Claim," as used in this clause, means a written demand or written assertion by one of the contracting parties seeking, as a matter of right, the payment of money in a sum certain, the adjustment or interpretation of contract terms, or other relief arising under or relating to this contract. However, a written demand or written assertion by the Contractor seeking the payment of money exceeding \$100,000 is not a claim under the Act until

certified. A voucher, invoice, or other routine request for payment that is not in dispute when submitted is not a claim under the Act. The submission may be converted to a claim under the Act, by complying with the submission and certification requirements of this clause, if it is disputed either as to liability or amount or is not acted upon in a reasonable time.

(d)(1) A claim by the Contractor shall be made in writing and, unless otherwise stated in this contract, submitted within 6 years after accrual of the claim to the Contracting Officer for a written decision. A claim by the Government against the Contractor shall be subject to a written decision by the Contracting Officer.

(2) (i) Contractors shall provide the certification specified in paragraph (d)(2)(iii) of this clause when submitting any claim exceeding \$100,000.

(ii) The certification requirement does not apply to issues in controversy that have not been submitted as all or part of a claim.

(iii) The certification shall state as follows:

'I certify that the claim is made in good faith; that the supporting data are accurate and complete to the best of my knowledge and belief; that the amount requested accurately reflects the contract adjustment for which the Contractor believes the Government is liable; and that I am duly authorized to certify the claim on behalf of the Contractor.'

(3) The certification may be executed by any person duly authorized to bind the Contractor with respect to the claim.

(e) For Contractor claims of \$100,000 or less, the Contracting Officer must, if requested in writing by the Contractor, render a decision within 60 days of the request. For Contractor-certified claims over \$100,000, the Contracting Officer must, within 60 days, decide the claim or notify the Contractor of the date by which the decision will be made.

(f) The Contracting Officer's decision shall be final unless the Contractor appeals or files a suit as provided in the Act.

(g) If the claim by the Contractor is submitted to the Contracting Officer or a claim by the Government is presented to the Contractor, the parties, by mutual consent, may agree to use alternative dispute resolution (ADR). If the Contractor refuses an offer for ADR, the Contractor shall inform the Contracting Officer, in writing, of the Contractor's specific reasons for rejecting the offer.

(h) The Government shall pay interest on the amount found due and unpaid from (1) the date the Contracting Officer receives the claim (certified if required), or (2) the date that payment otherwise would be due, if that date is later, until the date of payment. With regard to claims having defective certifications, as defined in (FAR) 48 CFR 33.201, interest shall be paid from the date that the Contracting Officer initially receives the claim. Simple interest on claims shall be paid at the rate, fixed by the Secretary of the Treasury as provided in the Act, which is applicable to the period during which the Contracting Officer receives the claim and then at the rate applicable for each 6-month period as fixed by the Treasury Secretary during the pendency of the claim.

(i) The Contractor shall proceed diligently with performance of this contract, pending final resolution of any request for relief, claim, appeal, or action arising under the contract, and comply with any decision of the Contracting Officer.

94. *FAR 52.233-11 DISPUTES (JULY 2002) ALTERNATE I (DEC 1991)

(a) This contract is subject to the Contract Disputes Act of 1978, as amended (41 U.S.C. 601-613).

(b) Except as provided in the Act, all disputes arising under or relating to this contract shall be resolved under this clause.

(c) "Claim," as used in this clause, means a written demand or written assertion by one of the contracting parties seeking, as a matter of right, the payment of money in a sum certain, the adjustment or interpretation of contract terms, or other relief arising under or relating to this contract. However, a written demand or written assertion by the Contractor seeking the payment of money exceeding \$100,000 is not a claim under the Act until certified. A voucher, invoice, or other routine request for payment that is not in dispute when submitted is not a claim under the Act. The submission may be converted to a claim under the Act, by complying with the submission and certification requirements of this clause, if it is disputed either as to liability or amount or is not acted upon in a reasonable time.

(d)(1) A claim by the Contractor shall be made in writing and, unless otherwise stated in this contract, submitted within 6 years after accrual of the claim to the Contracting Officer for a written decision. A claim by the Government against the Contractor shall be subject to a written decision by the Contracting Officer.

(2) (i) Contractors shall provide the certification specified in paragraph (d)(2)(iii) of this clause when submitting any claim exceeding \$100,000.

(ii) The certification requirement does not apply to issues in controversy that have not been submitted as all or part of a claim.

(iii) The certification shall state as follows: "I certify that the claim is made in good faith; that the supporting data are accurate and complete to the best of my knowledge and belief; that the amount requested accurately reflects the contract adjustment for which the Contractor believes the Government is liable; and that I am duly authorized to certify the claim on behalf of the Contractor."

(3) The certification may be executed by any person duly authorized to bind the Contractor with respect to the claim.

(e) For Contractor claims of \$100,000 or less, the Contracting Officer must, if requested in writing by the Contractor, render a decision within 60 days of the request. For Contractor-certified claims over \$100,000, the Contracting Officer must, within 60 days, decide the claim or notify the Contractor of the date by which the decision will be made.

(f) The Contracting Officer's decision shall be final unless the Contractor appeals or files a suit as provided in the Act.

(g) If the claim by the Contractor is submitted to the Contracting Officer or a claim by the Government is presented to the Contractor, the parties, by mutual consent, may agree to use alternative dispute resolution (ADR). If the Contractor refuses an offer for ADR, the Contractor shall inform the Contracting Officer, in writing, of the Contractor's specific reasons for rejecting the offer.

(h) The Government shall pay interest on the amount found due and unpaid from (1) the date that the Contracting Officer receives the claim (certified, if required); or (2) the date that payment otherwise would be due, if that date is later, until the date of payment. With regard to claims having defective certifications, as defined in FAR 33.201, interest shall be paid from the date that the Contracting Officer initially receives the claim. Simple interest on claims shall be paid at the rate, fixed by the Secretary of the Treasury as provided in the Act, which is applicable to the period during which the Contracting Officer receives the claim and then at the rate applicable for each 6-month period as fixed by the Treasury Secretary during the pendency of the claim.

(i) The Contractor shall proceed diligently with performance of this contract, pending final resolution of any request for relief, claim, appeal, or action arising under or relating to the contract, and comply with any decision of the Contracting Officer. (End of clause)

95. *FAR 52.233-3

PROTEST AFTER AWARD (AUG 1996)

(a) Upon receipt of a notice of protest (as defined in FAR 33.101) or a determination that a protest is likely (see FAR 33.102(d)), the Contracting Officer may, by written order to the Contractor, direct the Contractor to stop performance of the work called for by this contract. The order shall be specifically identified as a stop-work order issued under this clause. Upon receipt of the order, the Contractor shall immediately comply with its terms and take all reasonable steps to minimize the incurrence of costs allocable to the work covered by the order during the period of work stoppage. Upon receipt of the final decision in the protest, the Contracting Officer shall either--

(1) Cancel the stop-work order; or

(2) Terminate the work covered by the order as provided in the Default, or the Termination for Convenience of the Government, clause of this contract.

(b) If a stop-work order issued under this clause is canceled either before or after a final decision in the protest, the Contractor shall resume work. The Contracting Officer shall make an equitable adjustment in the delivery schedule or contract price, or both, and the contract shall be modified, in writing, accordingly, if--

(1) The stop-work order results in an increase in the time required for, or in the Contractor's cost properly allocable to, the performance of any part of this contract; and

(2) The Contractor asserts its right to an adjustment within 30 days after the end of the period of work stoppage; provided, that if the Contracting Officer decides the facts justify the action, the Contracting Officer may receive and act upon a proposal at any time before final payment under this contract.

(c) If a stop-work order is not canceled and the work covered by the order is terminated for the convenience of the Government, the Contracting Officer shall allow reasonable costs resulting from the stop-work order in arriving at the termination settlement.

(d) If a stop-work order is not canceled and the work covered by the order is terminated for default, the Contracting Officer shall allow, by equitable adjustment or otherwise, reasonable costs resulting from the stop-work order.

(e) The Government's rights to terminate this contract at any time are not affected by action taken under this clause.

(f) If, as the result of the Contractor's intentional or negligent misstatement, misrepresentation, or miscertification, a protest related to this contract is sustained, and the Government pays costs, as provided in FAR 33.102(b)(2) or 33.104(h)(1), the Government may require the Contractor to reimburse the Government the amount of such costs. In addition to any other remedy available, and pursuant to the requirements of Subpart 32.6, the Government may collect this debt by offsetting the amount against any payment due the Contractor under any contract between the Contractor and the Government.

96. RESERVED.

97. FAR 52.236-2 DIFFERING SITE CONDITIONS (APR 1984)

(a) The Contractor shall promptly, and before the conditions are disturbed, give a written notice to the Contracting Officer of

(1) subsurface or latent physical conditions at the site which differ materially from those indicated in this contract, or

(2) unknown physical conditions at the site, of an unusual nature, which differ materially from those ordinarily encountered and generally recognized as inhering in work of the character provided for in the contract.

(b) The Contracting Officer shall investigate the site conditions promptly after receiving the notice. If the conditions do materially so differ and cause an increase or decrease in the Contractor's cost of, or the time required for, performing any part of the work under this contract, whether or not changed as a result of the conditions, an equitable adjustment shall be made under this clause and the contract modified in writing accordingly.

(c) No request by the Contractor for an equitable adjustment to the contract under this clause shall be allowed, unless the Contractor has given the written notice required, provided, that the time prescribed in (a) above for giving written notice may be extended by the Contracting Officer.

(d) No request by the Contractor for an equitable adjustment to the contract for differing site conditions shall be allowed if made after final payment under this contract.

98. *FAR 52.236-3 SITE INVESTIGATION AND CONDITIONS AFFECTING THE WORK (APR 1984)

(a) The Contractor acknowledges that it has taken steps reasonably necessary to ascertain the nature and location of the work, and that it has investigated and satisfied itself as to the general and local conditions which can affect the work or its cost, including but not limited to

- (1) conditions bearing upon transportation, disposal, handling, and storage of materials;
- (2) the availability of labor, water, electric power, and roads;
- (3) uncertainties of weather, river stages, tides, or similar physical conditions at the site;
- (4) the conformation and conditions of the ground; and
- (5) the character of equipment and facilities needed preliminary to and during work

performance. The Contractor also acknowledges that it has satisfied itself as to the character, quality, and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is reasonably ascertainable from an inspection of the site, including all exploratory work done by the Government, as well as from the drawings and specifications made a part of this contract. Any failure of the Contractor to take the actions

described and acknowledged in this paragraph will not relieve the Contractor from responsibility for estimating properly the difficulty and cost of successfully performing the work, or for proceeding to successfully perform the work without additional expense to the Government.

(b) The Government assumes no responsibility for any conclusions or interpretations made by the Contractor based on the information made available by the Government. Nor does the Government assume responsibility for any understanding reached or representation made concerning conditions which can affect the work by any of its officers or agents before the execution of this contract, unless that understanding or representation is expressly stated in this contract.

99. *FAR 52.236-5 MATERIAL AND WORKMANSHIP (APR 1984)

(a) All equipment, material, and articles incorporated into the work covered by this contract shall be new and of the most suitable grade for the purpose intended, unless otherwise specifically provided in this contract. References in the specifications to equipment, material, articles, or patented processes by trade name, make, or catalog number, shall be regarded as establishing a standard of quality and shall not be construed as limiting competition. The Contractor may, at its option, use any equipment, material, article, or process that, in the judgment of the Contracting Officer, is equal to that named in the specifications, unless otherwise specifically provided in this contract.

(b) The Contractor shall obtain the Contracting Officer's approval of the machinery and mechanical and other equipment to be incorporated into the work. When requesting approval, the Contractor shall furnish to the Contracting Officer the name of the manufacturer, the model number, and other information concerning the performance, capacity, nature, and rating of the machinery and mechanical and other equipment. When required by this contract or by the Contracting Officer, the Contractor shall also obtain the Contracting Officer's approval of the material or articles which the Contractor contemplates incorporating into the work. When requesting approval, the Contractor shall provide full information concerning the material or articles. When directed to do so, the Contractor shall submit samples for approval at the Contractor's expense, with all shipping charges prepaid. Machinery, equipment, material, and articles that do not have the required approval shall be installed or used at the risk of subsequent rejection.

(c) All work under this contract shall be performed in a skillful and workmanlike manner. The Contracting Officer may require, in writing, that the Contractor remove from the work any employee the Contracting Officer deems incompetent, careless, or otherwise objectionable.

100. *FAR 52.236-6 SUPERINTENDENCE BY THE CONTRACTOR (APR 1984)

At all times during performance of this contract and until the work is completed and accepted, the Contractor shall directly superintend the work or assign and have on the work site a competent superintendent who is satisfactory to the Contracting Officer and has authority to act for the Contractor.

101. FAR 52.236-7 PERMITS AND RESPONSIBILITIES (NOV 1991)

The Contractor shall, without additional expense to the Government, be responsible for obtaining any necessary licenses and permits, and for complying with any Federal, State, and municipal laws, codes, and regulations applicable to the performance of the work. The Contractor shall also be responsible for all damages to persons or property that occur as a result of the Contractor's fault or negligence. The Contractor shall also be responsible for all materials delivered and work performed until completion and acceptance of the entire work, except for any completed unit of work which may have been accepted under the contract.

102. *FAR 52.236-8 OTHER CONTRACTS (APR 1984)

The Government may undertake or award other contracts for additional work at or near the site of the work under this contract. The Contractor shall fully cooperate with the other contractors and with Government employees

and shall carefully adapt scheduling and performing the work under this contract to accommodate the additional work, heeding any direction that may be provided by the Contracting Officer. The Contractor shall not commit or permit any act that will interfere with the performance of work by any other contractor or by Government employees.

103. *FAR 52.236-9 PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES, AND IMPROVEMENTS (APR 1984)

(a) The Contractor shall preserve and protect all structures, equipment, and vegetation (such as trees, shrubs, and grass) on or adjacent to the work site, which are not to be removed and which do not unreasonably interfere with the work required under this contract. The Contractor shall only remove trees when specifically authorized to do so, and shall avoid damaging vegetation that will remain in place. If any limbs or branches of trees are broken during contract performance, or by the careless operation of equipment, or by workmen, the Contractor shall trim those limbs or branches with a clean cut and paint the cut with a tree-pruning compound as directed by the Contracting Officer.

(b) The Contractor shall protect from damage all existing improvements and utilities

(1) at or near the work site, and

(2) on adjacent property of a third party, the locations of which are made known to or should be known by the Contractor. The Contractor shall repair any damage to those facilities, including those that are the property of a third party, resulting from failure to comply with the requirements of this contract or failure to exercise reasonable care in performing the work. If the Contractor fails or refused to repair the damage promptly, the Contracting Officer may have the necessary work performed and charge the cost to the Contractor.

104. FAR 52.236-10 OPERATIONS AND STORAGE AREAS (APR 1984)

(a) The Contractor shall confine all operations (including storage of materials) on Government premises to areas authorized or approved by the Contracting Officer. The Contractor shall hold and save the Government, its officers and agents, free and harmless from liability of any nature occasioned by the Contractor's performance.

(b) Temporary buildings (e.g., storage sheds, shops, offices) and utilities may be erected by the Contractor only with the approval of the Contracting Officer and shall be built with labor and materials furnished by the Contractor without expense to the Government. The temporary buildings and utilities shall remain the property of the Contractor and shall be removed by the Contractor at its expense upon completion of the work. With the written consent of the Contracting Officer, the buildings and utilities may be abandoned and need not be removed.

(c) The Contractor shall, under regulations prescribed by the Contracting Officer, use only established roadways, or use temporary roadways constructed by the Contractor when and as authorized by the Contracting Officer. When materials are transported in prosecuting the work, vehicles shall not be loaded beyond the loading capacity recommended by the manufacturer of the vehicle or prescribed by any Federal, State, or local law or regulation. When it is necessary to cross curbs or sidewalks, the Contractor shall protect them from damage. The Contractor shall repair or pay for the repair of any damaged curbs, sidewalks, or roads.

105. *FAR 52.236-11 USE AND POSSESSION PRIOR TO COMPLETION (APR 1984)

(a) The Government shall have the right to take possession of or use any completed or partially completed part of the work. Before taking possession of or using any work, the Contracting Officer shall furnish the Contractor a list of items of work remaining to be performed or corrected on those portions of the work that the Government intends to take possession of or use. However, failure of the Contracting Officer to list any item of work shall not relieve the Contractor of responsibility for complying with the terms of the contract. The Government's possession or use shall not be deemed an acceptance of any work under the contract.

(b) While the Government has such possession or use, the Contractor shall be relieved of the responsibility for the loss of or damage to the work resulting from the Government's possession or use, notwithstanding the terms of the clause in this contract entitled "Permits and Responsibilities." If prior possession or use by the Government delays the progress of the work or causes additional expense to the Contractor, an equitable adjustment shall be made in the contract price or the time of completion, and the contract shall be modified in writing accordingly.

106. *FAR 52.236-12 CLEANING UP (APR 1984)

The Contractor shall at all times keep the work area, including storage areas, free from accumulations of waste materials. Before completing the work, the Contractor shall remove from the work and premises any rubbish, tools, scaffolding, equipment, and materials that are not the property of the Government. Upon completing the work, the Contractor shall leave the work area in a clean, neat, and orderly condition satisfactory to the Contracting Officer.

107. *FAR 52.236-13 ACCIDENT PREVENTION-ALTERNATE I (NOV 1991)

(a) The Contractor shall provide and maintain work environments and procedures which will (1) safeguard the public and Government personnel, property, materials, supplies, and equipment exposed to Contractor operations and activities; (2) avoid interruptions of Government operations and delays in project completion dates; and (3) control costs in the performance of this contract.

(b) For these purposes on contracts for construction or dismantling, demolition, or removal of improvements, the Contractor shall--

- (1) Provide appropriate safety barricades, signs, and signal lights;
- (2) Comply with the standards issued by the Secretary of Labor at 29 CFR Part 1926 and 29 CFR Part 1910; and
- (3) Ensure that any additional measures the Contracting Officer determines to be reasonably necessary for the purposes are taken.

(c) If this contract is for construction or dismantling, demolition or removal of improvements with any Department of Defense agency or component, the Contractor shall comply with all pertinent provisions of the latest version of U.S. Army Corps of engineers Safety and Health Requirements Manual, EM 385-1-1, in effect on the date of the solicitation.

(d) Whenever the Contracting Officer becomes aware of any noncompliance with these requirements or any condition which poses a serious or imminent danger to the health or safety of the public or Government personnel, the Contracting Officer shall notify the Contractor orally, with written confirmation, and request immediate initiation of corrective action. This notice, when delivered to the Contractor or the Contractor's representative at the work site, shall be deemed sufficient notice of the noncompliance and that corrective action is required. After receiving the notice, the Contractor shall immediately take corrective action. If the Contractor fails or refuses to promptly take corrective action, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. The Contractor shall not be entitled to any equitable adjustment of the contract price or extension of the performance schedule on any stop work order issued under this clause.

(e) The Contractor shall insert this clause, including this paragraph (e), with appropriate changes in the designation of the parties, in subcontractors.

(f) Before commencing the work, the Contractor shall--

- (1) Submit a written proposed plan for implementing this clause. The plan shall include an analysis of the significant hazards to life, limb, and property inherent in contract work performance and a plan for controlling these hazards; and
- (2) Meet with representatives of the Contracting Officer to discuss and develop a mutual understanding relative to administration of the overall safety program.

108. *FAR 52.236-14 AVAILABILITY AND USE OF UTILITY SERVICES (APR 1984)

(a) The Government shall make all reasonably required amounts of utilities available to the Contractor from existing outlets and supplies, as specified in the contract. Unless otherwise provided in the contract, the amount of each utility service consumed shall be charged to or paid for by the Contractor at prevailing rates charged to the Government or, where the utility is produced by the Government, at reasonable rates determined by the Contracting Officer. The Contractor shall carefully conserve any utilities furnished without charge.

(b) The Contractor, at its expense and in a workmanlike manner satisfactory to the Contracting Officer, shall install and maintain all necessary temporary connections and distribution lines, and all meters required to measure the amount of each utility used for the purpose of determining charges. Before final acceptance of the work by the Government, the Contractor shall remove all the temporary connections, distribution lines, meters, and associated paraphernalia.

109. FAR 52.236-15 SCHEDULES FOR CONSTRUCTION CONTRACTS (APR 1984)

(a) The Contractor shall, within five days after the work commences on the contract or another period of time determined by the Contracting Officer, prepare and submit to the Contracting Officer for approval three copies of a practicable schedule showing the order in which the Contractor proposes to perform the work, and the dates on which the Contractor contemplates starting and completing the several salient features of the work (including acquiring materials, plant, and equipment). The schedule shall be in the form of a progress chart of suitable scale to indicate appropriately the percentage of work scheduled for completion by any given date during the period. If the Contractor fails to submit a schedule within the time prescribed, the Contracting Officer may withhold approval of progress payments until the Contractor submits the required schedule.

(b) The Contractor shall enter the actual progress on the chart as directed by the Contracting Officer, and upon doing so shall immediately deliver three copies of the annotated schedule to the Contracting Officer. If, in the opinion of the Contracting Officer, the Contractor falls behind the approved schedule, the Contractor shall take steps necessary to improve its progress, including those that may be required by the Contracting Officer, without additional cost to the Government. In this circumstance, the Contracting Officer may require the Contractor to increase the number of shifts, overtime operations, days of work, and/or the amount of construction plant, and to submit for approval any supplementary schedule or schedules in chart form as the Contracting Officer deems necessary to demonstrate how the approved rate of progress will be regained.

(c) Failure of the Contractor to comply with the requirements of the Contracting Officer under this clause shall be grounds for a determination by the Contracting Officer that the Contractor is not prosecuting the work with sufficient diligence to ensure completion within the time specified in the contract. Upon making this determination, the Contracting Officer may terminate the Contractor's right to proceed with the work, or any separable part of it, in accordance with the default terms of this contract.

110. *FAR 52.236-17 LAYOUT OF WORK (APR 1984)

The Contractor shall lay out its work from Government-established base lines and bench marks indicated on the drawings, and shall be responsible for all measurements in connection with the layout. The Contractor shall furnish, at its own expense, all stakes, templates, platforms, equipment, tools, materials, and labor required to lay out any part of the work. The Contractor shall be responsible for executing the work to the lines and grades that may be established or indicated by the Contracting Officer. The Contractor shall also be responsible for maintaining and preserving all stakes and other marks established by the Contracting Officer until authorized to remove them. If such marks are destroyed by the Contractor or through its negligence before their removal is authorized, the Contracting Officer may replace them and deduct the expense of the replacement from any amounts due or to become due to the Contractor.

111. FAR 52.236-21 SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION (FEB

1997)

(a) The Contractor shall keep on the work site a copy of the drawings and specifications and shall at all times give the Contracting Officer access thereto. Anything mentioned in the specifications and not shown on the drawings, or shown on the drawings and not mentioned in the specifications, shall be of like effect as if shown or mentioned in both. In case of difference between drawings and specifications, the specifications shall govern. In case of discrepancy in the figures, in the drawings, or in the specifications, the matter shall be promptly submitted to the Contracting Officer, who shall promptly make a determination in writing. Any adjustment by the Contractor without such a determination shall be at its own risk and expense. The Contracting Officer shall furnish from time to time such detailed drawings and other information as considered necessary, unless otherwise provided.

(b) Wherever in the specifications or upon the drawings the words "directed," "required," "ordered," "designated," "prescribed," or words of like import are used, it shall be understood that the "direction," "requirement," "order," "designation," or "prescription," of the Contracting Officer is intended and similarly the words "approved," "acceptable," "satisfactory," or words of like import shall mean "approved by," or "acceptable to," or "satisfactory to" the Contracting Officer, unless otherwise expressly stated.

(c) Where "as shown," "as indicated," "as detailed," or words of similar import are used, it shall be understood that the reference is made to the drawings accompanying this contract unless stated otherwise. The word "provided" as used herein shall be understood to mean "provide complete in place," that is "furnished and installed."

(d) Shop drawings means drawings, submitted to the Government by the Contractor, subcontractor, or any lower tier subcontractor pursuant to a construction contract, showing in detail

(1) the proposed fabrication and assembly of structural elements, and

(2) the installation (i.e., fit, and attachment details) of materials or equipment. It includes drawings, diagrams, layouts, schematics, descriptive literature, illustrations, schedules, performance and test data, and similar materials furnished by the Contractor to explain in detail specific portions of the work required by the contract. The Government may duplicate, use, and disclose in any manner and for any purpose shop drawings delivered under this contract.

(e) If this contract requires shop drawings, the Contractor shall coordinate all such drawings, and review them for accuracy, completeness, and compliance with contract requirements and shall indicate its approval thereon as evidence of such coordination and review. Shop drawings submitted to the Contracting Officer without evidence of the Contractor's approval may be returned for resubmission. The Contracting Officer will indicate an approval or disapproval of the shop drawings and if not approved as submitted shall indicate the Government's reasons therefor. Any work done before such approval shall be at the Contractor's risk. Approval by the Contracting Officer shall not relieve the Contractor from responsibility for any errors or omissions in such drawings, nor from responsibility for complying with the requirements of this contract, except with respect to variations described and approved in accordance with (f) below.

(f) If shop drawings show variations from the contract requirements, the Contractor shall describe such variations in writing, separate from the drawings, at the time of submission. If the Contracting Officer approves any such variation, the Contracting Officer shall issue an appropriate contract modification, except that, if the variation is minor or does not involve a change in price or in time of performance, a modification need not be issued.

(g) The Contractor shall submit to the Contracting Officer for approval four copies (unless otherwise indicated) of all shop drawings as called for under the various headings of these specifications. Three sets (unless otherwise indicated) of all shop drawings, will be retained by the Contracting Officer and one set will be returned to the Contractor.

112. *FAR 52.236-23 RESPONSIBILITY OF THE ARCHITECT-ENGINEER CONTRACTOR (APR 1984)

(a) The Contractor shall be responsible for the professional quality, technical accuracy, and the coordination of all designs, drawings, specifications, and other services furnished by the Contractor under this contract. The Contractor shall, without additional compensation, correct or revise any errors or deficiencies in its designs, drawings, specifications, and other services.

(b) Neither the Government's review, approval or acceptance of, nor payment for, the services required under this contract shall be construed to operate as a waiver of any rights under this contract or of any cause of action arising out of the performance of this contract, and the Contractor shall be and remain liable to the Government in accordance with applicable law for all damages to the Government caused by the Contractor's negligent performance of any of the services furnished under this contract.

(c) The rights and remedies of the Government provided for under this contract are in addition to any other rights and remedies provided by law.

(d) If the Contractor is comprised of more than one legal entity, each such entity shall be jointly and severally liable hereunder. (End of clause)

113. *FAR 52.236-24 WORK OVERSIGHT IN ARCHITECT-ENGINEER CONTRACTS (APR 1984)

The extent and character of the work to be done by the Contractor shall be subject to the general oversight, supervision, direction, control, and approval of the Contracting Officer. (End of clause)

114. *FAR 52.236-25 REQUIREMENTS FOR REGISTRATION OF DESIGNERS (JUNE 2003)

Architects or engineers registered to practice in the particular professional field involved in a State, the District of Columbia, or an outlying area of the United States shall prepare or review and approve the design of architectural, structural, mechanical, electrical, civil, or other engineering features of the work. (End of clause)

115. *FAR 52.236-26 PRECONSTRUCTION CONFERENCE (FEB 1995)

If the Contracting Officer decides to conduct a preconstruction conference, the successful offeror will be notified and will be required to attend. The Contracting Officer's notification will include specific details regarding the date, time, and location of the conference, any need for attendance by subcontractors, and information regarding the items to be discussed.

116. DFARS 252.236-7000 MODIFICATION OF PROPOSALS - PRICE BREAKDOWN (DEC 1991)

(a) The Contractor shall furnish a price breakdown, itemized as required and within the time specified by the Contracting Officer, with any proposal for a contract modification.

(b) The price breakdown--

(1) Must include sufficient detail to permit an analysis of profit, and of all costs for--

(i) Material;

(ii) Labor,

(iii) Equipment;

(iv) Subcontracts; and

(2) Must cover all work involved in the modification, whether the work was deleted, added, or changed.

(c) The Contractor shall provide similar price breakdowns to support any amounts claimed for subcontracts.

(d) The Contractor's proposal shall include a justification for any time extension proposed.

117. *FAR 52.242-13 BANKRUPTCY (JUL 1995)

In the event the Contractor enters into proceedings relating to bankruptcy, whether voluntary or involuntary, the Contractor agrees to furnish, by certified mail or electronic commerce method authorized by the contract, written notification of the bankruptcy to the Contracting Officer responsible for administering the contract. This notification shall be furnished within five days of the initiation of the proceedings relating to bankruptcy filing. This notification shall include the date on which the bankruptcy petition was filed, the identity of the court in which the bankruptcy petition was filed, and a listing of Government contract numbers and contracting offices for all Government contracts against which final payment has not been made. This obligation remains in effect until final payment under this contract.

118. *FAR 52.242-14 SUSPENSION OF WORK (APR 1984)

(a) The Contracting Officer may order the Contractor, in writing, to suspend, delay, or interrupt all or any part of the work of this contract for the period of time that the Contracting Officer determines appropriate for the convenience of the Government.

(b) If the performance of all or any part of the work is, for an unreasonable period of time, suspended, delayed, or interrupted (1) by an act of the Contracting Officer in the administration of this contract, or (2) by the Contracting Officer's failure to act within the time specified in this contract (or within a reasonable time if not specified), an adjustment shall be made for any increase in the cost of performance of this contract (excluding profit) necessarily caused by the unreasonable suspension, delay, or interruption, and the contract modified in writing accordingly. However, no adjustment shall be made under this clause for any suspension, delay, or interruption to the extent that performance would have been so suspended, delayed, or interrupted by any other cause, including the fault or negligence of the Contractor, or for which an equitable adjustment is provided for or excluded under any other term or condition of this contract.

(c) A claim under this clause shall not be allowed (1) for any costs incurred more than 20 days before the Contractor shall have notified the Contracting Officer in writing of the act or failure to act involved (but this requirement shall not apply as to a claim resulting from a suspension order), and (2) unless the claim, in an amount stated, is asserted in writing as soon as practicable after the termination of the suspension, delay, or interruption, but not later than the date of final payment under the contract.

119. DFARS 252.242-7005 COST/SCHEDULE STATUS REPORT (MAR 1998)

(a) The Contractor shall use management procedures in the performance of this contract that provide for--

- (1) Planning and control of costs;
- (2) Measurement of performance (value for completed tasks); and
- (3) Generation of timely and reliable information for the cost/schedule status report (C/SSR).

(b) As a minimum, these procedures must provide for--

- (1) Establishing the time-phased budgeted cost of work scheduled (including work authorization, budgeting, and scheduling), the budgeted cost for work performed, the actual cost of work performed, the budget at completion, the estimate at completion, and provisions for subcontractor performance measurement and reporting;
- (2) Applying all direct and indirect costs and provisions for use and control of management reserve and undistributed budget;
- (3) Incorporating changes to the contract budget base for both Government directed changes and internal replanning;
- (4) Establishing constraints to preclude subjective adjustment of data to ensure performance measurement remains realistic. The total allocated budget may exceed the contract budget base only after consultation with the Contracting Officer. For cost-reimbursement contracts, the contract budget base shall exclude changes for cost growth increases, other than for authorized changes to the contract scope; and
- (5) Establishing the capability to accurately identify and explain significant cost and schedule variances, both on a cumulative basis and projected at completion basis.

(c) The Offeror/Contractor may use a cost/schedule control system that has been recognized by the cognizant Administrative Contracting Officer (ACO) as complying with the earned value management system

criteria provided in DoD 5000.2-R, Mandatory Procedures for Major Defense Acquisition Programs (MDAPs) and Major Automated Information System (MAIS) Acquisition Programs.

(d) The Government may require integrated baseline reviews. Such reviews shall be scheduled as early as practicable and should be conducted within 180 calendar days after (1) contract award, (2) the exercise of significant contract options, or (3) the incorporation of major modifications. The objective of the integrated baseline review is for the Government and the Contractor to jointly assess areas, such as the Contractor's planning, to ensure complete coverage of the statement of work, logical scheduling of the work activities, adequate resourcing, and identification of inherent risks.

(e) The Contractor shall provide access to all pertinent records, company procedures, and data requested by the Contracting Officer, or authorized representative, to--

(1) Show proper implementation of the procedures generating the cost schedule information being used to satisfy the C/SSR contractual data requirements to the Government; and

(2) Ensure continuing application of the accepted company procedures in satisfying the C/SSR data item.

(f) The Contractor shall submit any substantive changes to the procedures and their impact to the ACO for review.

(g) The Contractor shall require a subcontractor to furnish C/SSR in each case where the subcontract is other than firm fixed-price, is 12 months or more in duration, and has critical or significant tasks related to the prime contract. Critical or significant tasks shall be defined by mutual agreement between the Government and Contractor. Each subcontractor's reported cost and schedule information shall be incorporated into the Contractor's C/SSR.

(End of clause)

120. *FAR 52.243-1 CHANGES--FIXED-PRICE (AUG 1987) ALTERNATE III (AUG 1984)

(a) The Contracting Officer may at any time, by written order, and without notice to the sureties, if any, make changes within the general scope of this contract in the services to be performed.

(b) If any such change causes an increase or decrease in the cost of, or the time required for, performance of any part of the work under this contract, whether or not changed by the order, the Contracting Officer shall make an equitable adjustment in the contract price, the delivery schedule, or both, and shall modify the contract.

(c) The Contractor must assert its right to an adjustment under this clause within 30 days from the date of receipt of the written order. However, if the Contracting Officer decides that the facts justify it, the Contracting Officer may receive and act upon a proposal submitted before final payment of the contract.

(d) If the Contractor's proposal includes the cost of property made obsolete or excess by the change, the Contracting Officer shall have the right to prescribe the manner of the disposition of the property.

(e) Failure to agree to any adjustment shall be a dispute under the Disputes clause. However, nothing in this clause shall excuse the Contractor from proceeding with the contract as changed.

(f) No services for which an additional cost or fee will be charged by the Contractor shall be furnished without the prior written authorization of the Contracting Officer. (End of clause)

121. FAR 52.243-4 CHANGES (AUG 1987)

(a) The Contracting Officer may, at any time, without notice to the sureties, if any, by written order designated or indicated to be a change order, make changes in the work within the general scope of the contract, including changes--

- (1) In the specifications (including drawings and designs);
- (2) In the method or manner of performance of the work;
- (3) In the Government-furnished facilities, equipment, materials, services, or site; or
- (4) Directing acceleration in the performance of the work.

(b) Any other written or oral order (which, as used in this paragraph (b), includes direction, instruction, interpretation, or determination) from the Contracting Officer that causes a change shall be treated as a change order under this clause; provided, that the Contractor gives the Contracting Officer written notice stating

- (1) the date, circumstances, and source of the order and
- (2) that the Contractor regards the order as a change order.

(c) Except as provided in this clause, no order, statement, or conduct of the Contracting Officer shall be treated as a change under this clause or entitle the Contractor to an equitable adjustment.

(d) If any change under this clause causes an increase or decrease in the Contractor's cost of, or the time required for, the performance of any part of the work under this contract, whether or not changed by any such order, the Contracting Officer shall make an equitable adjustment and modify the contract in writing. However, except for an adjustment based on defective specifications, no adjustment for any change under paragraph (b) of this clause shall be made for any costs incurred more than 20 days before the Contractor gives written notice as required. In the case of defective specifications for which the Government is responsible, the equitable adjustment shall include any increased cost reasonably incurred by the Contractor in attempting to comply with the defective specifications.

(e) The Contractor must assert its right to an adjustment under this clause within 30 days after

- (1) receipt of a written change order under paragraph (a) of this clause or

(2) the furnishing of a written notice under paragraph (b) of this clause, by submitting to the Contracting Officer a written statement describing the general nature and amount of the proposal, unless this period is extended by the Government. The statement of proposal for adjustment may be included in the notice under paragraph (b) above.

(f) No proposal by the Contractor for an equitable adjustment shall be allowed if asserted after final payment under this contract.

122. DFARS 252.243-7001 PRICING OF CONTRACT MODIFICATIONS (DEC 1991)

When costs are a factor in any price adjustment under this contract, the contract cost principles and procedures in FAR Part 31 and DRARS Part 231, in effect on the date of this contract, apply.

123. DFARS 252.243-7002 REQUESTS FOR EQUITABLE ADJUSTMENT (MAR 1998)

(a) The amount of any request for equitable adjustment to contract terms shall accurately reflect the contract adjustment for which the Contractor believes the Government is liable. The request shall include only costs for performing the change, and shall not include any costs that already have been reimbursed or that have been separately claimed. All indirect costs included in the request shall be properly allocable to the change in accordance with applicable acquisition regulations.

(b) In accordance with 10 U.S.C. 2410(a), any request for equitable adjustment to contract terms that exceeds the simplified acquisition threshold shall bear, at the time of submission, the following certificate executed by an individual authorized to certify the request on behalf of the Contractor:

I certify that the request is made in good faith, and that the supporting data are accurate and complete to the best of my knowledge and belief.

(Official's Name)

(Title)

(c) The certification in paragraph (b) of this clause requires full disclosure of all relevant facts, including--

(1) Cost or pricing data if required in accordance with subsection 15.403-4 of the Federal Acquisition Regulation; and

(2) Information other than cost or pricing data, in accordance with subsection 15.403-3 of the FAR, including actual cost data and data to support any estimated costs, even if cost or pricing data are not required.

(d) The certification requirement in paragraph (b) of this clause does not apply to---

(1) Requests for routine contract payments; for example, requests for payment for accepted supplies and services, routine vouchers under a cost-reimbursement type contract, or progress payment invoices; or

(2) Final adjustment under an incentive provision of the contract.

(End of clause)

124. *FAR 52.244-2 SUBCONTRACTS (AUG 1998)

(a) Definitions. As used in this clause--

"Approved purchasing system" means a Contractor's purchasing system that has been reviewed and approved in accordance with Part 44 of the Federal Acquisition Regulation (FAR).

"Consent of subcontract" means the Contracting Officer's written consent for the Contractor to enter into a particular subcontract.

"Subcontract," means any contract, as defined in FAR Subpart 2.1, entered into by a subcontractor to furnish supplies or services for performance of the the prime contract or a subcontract. It includes, but is not limited to purchase orders, and changes and modifications to purchase orders.

(b) This clause does not apply to subcontracts for special test equipment when the contract contains the clause at FAR 52.245-18, Special Test Equipment.

(c) When this clause is included in a fixed-price type contract, consent to subcontract is required only on unpriced contract actions (including unpriced modification or unpriced delivery orders), and only if required in accordance with paragraph (d) or (e) of this clause.

(d) If the Contractor does not have an approved purchasing system, consent to subcontract is required for any subcontract that--

(1) Is of the cost-reimbursement, time-and-materials, or labor-hour type; or

(2) Is fixed-price and exceeds--

(i) For a contract awarded by the Department of Defense, the Coast Guard, or the National Aeronautics and Space Administration, the greater of the simplified threshold or 5 percent of the total estimated cost of the contract; or

(ii) For a contract awarded by a civilian agency other than the Coast Guard and the National Aeronautics and Space Administration, either the the simplified threshold or 5 percent of the total estimated cost of the contract.

(e) If the Contractor has an approved purchasing system, the Contractor nevertheless shall obtain the Contracting Officer's written consent before placing the following subcontracts:

(f)(1) The Contractor shall notify the Contracting Officer reasonably in advance of placing any subcontract or modification thereof for which consent is required under paragraph (c), (d), or (e) of this clause, including the following information:

- (i) A description of the supplies or services to be subcontracted.
- (ii) Identification of the type of subcontract to be used.
- (iii) Identification of the proposed subcontractor.
- (iv) The proposed subcontract price.
- (v) The subcontractor's current, complete, and accurate cost or pricing data and Certificate of Current Cost or Pricing Data, if required by other contract provisions.
- (vi) The subcontractor's Disclosure Statement or Certificate relating to Cost Accounting Standards when such data are required by other provisions of this contract.
- (vii) A negotiation memorandum reflecting--
 - (A) The principal elements of the subcontract price negotiations;
 - (B) The most significant considerations controlling establishment of initial or revised prices;
 - (C) The reason cost or pricing data were or were not required;
 - (D) The extent, if any, to which the Contractor did not rely on the subcontractor's cost or pricing data in determining the price objective and in negotiating the final price;
 - (E) The extent to which it was recognized in the negotiation that the subcontractor's cost or pricing data were not accurate, complete, or current; the action taken by the Contractor and subcontractor; and the effect of any such defective data on the total price negotiated;
 - (F) The reasons for any significant difference between the Contractor's price objective and the price negotiated; and
 - (G) A complete explanation of the incentive fee or profit plan when incentives are used. The explanation shall identify each critical performance element, management decisions used to quantify each incentive element, reasons for the incentives, and a summary of all trade-off possibilities considered.
- (2) The Contractor is not required to notify the Contracting Officer in advance of entering into any subcontract for which consent is not required under paragraph (c), (d), or (e) of this clause.
- (g) Unless the consent or approval specifically provides otherwise, neither consent by the Contracting Officer to any subcontract nor approval of the Contractor's purchasing system shall constitute a determination--
 - (1) Of the acceptability of any subcontract terms or conditions;
 - (2) Of the acceptability of any cost under this contract; or
 - (3) To relieve the Contractor of any responsibility for performing this contract.
- (h) No subcontract or modification thereof placed under this contract shall provide for payment on a cost-plus-a-percentage-of-cost basis, and any fee payable under cost-reimbursement subcontracts shall not exceed the fee limitations in FAR 15.404-4(c)(4)(i).
- (i) The Contractor shall give the Contracting Officer immediate written notice of any action or suit filed and prompt notice of any claim made against the Contractor by any subcontractor or vendor that, in the opinion of the Contractor, may result in litigation related in any way to this contract, with respect to which the Contractor may be entitled to reimbursement by the Government.
- (j) The Government reserves the right to review the Contractor's purchasing system as set forth in FAR Subpart 44.3.
- (k) Paragraphs (d) and (f) of this clause do not apply to the following subcontracts, which ere evaluated during negotiations:

(End of clause)

125. *FAR 52.244-4 SUBCONTRACTORS AND OUTSIDE ASSOCIATES AND CONSULTANTS (ARCHITECT-ENGINEER SERVICES) (AUG 1998)

Any subcontractors and outside associates or consultants required by the Contractor in connection with the services covered by the contract will be limited to individuals or firms that were specifically identified and agreed to during negotiations. The Contractor shall obtain the Contracting Officer's written consent before making any substitution for these subcontractors, associates, or consultants. (End of clause)

126. FAR 52.244-6 SUBCONTRACTS FOR COMMERCIAL ITEMS (APR 2003)

(a) *Definitions.* As used in this clause—

"Commercial item" has the meaning contained in the clause at 52.202-1, Definitions.

"Subcontract" includes a transfer of commercial items between divisions, subsidiaries, or affiliates of the Contractor or subcontractor at any tier.

(b) To the maximum extent practicable, the Contractor shall incorporate, and require its subcontractors at all tiers to incorporate, commercial items or nondevelopmental items as components of items to be supplied under this contract.

(c)(1) The Contractor shall insert the following clauses in subcontracts for commercial items:

(i) 52.219-8, Utilization of Small Business Concerns (Oct 2000) (15 U.S.C. 637(d)(2) and (3)), in all subcontracts that offer further subcontracting opportunities. If the subcontract (except subcontracts to small business concerns) exceeds \$500,000 (\$1,000,000 for construction of any public facility), the subcontractor must include 52.219-8 in lower tier subcontracts that offer subcontracting opportunities.

(ii) 52.222-26, Equal Opportunity (Apr 2002) (E.O. 11246).

(iii) 52.222-35, Equal Opportunity for Special Disabled Veterans, Veterans of the Vietnam Era, and Other Eligible Veterans (Dec 2001) (38 U.S.C. 4212(a));

(iv) 52.222-36, Affirmative Action for Workers with Disabilities (June 1998) (29 U.S.C. 793).

(v) 52.247-64, Preference for Privately Owned U.S.-Flag Commercial Vessels (APR 2003) (46 U.S.C. Appx 1241 and 10 U.S.C. 2631) (flow down required in accordance with paragraph (d) of FAR clause 52.247-64).

(2) While not required, the Contractor may flow down to subcontracts for commercial items a minimal number of additional clauses necessary to satisfy its contractual obligations.

(d) The Contractor shall include the terms of this clause, including this paragraph (d), in subcontracts awarded under this contract. (End of clause)

127. *FAR 52.245-2 GOVERNMENT PROPERTY (FIXED-PRICE CONTRACTS) (JUNE 2003) [For Government Property over \$100,000]

(a) Government-furnished property.

(1) The Government shall deliver to the Contractor, for use in connection with and under the terms of this contract, the Government-furnished property described in the Schedule or specifications together with any related data and information that the Contractor may request and is reasonably required for the intended use of the property (hereinafter referred to as "Government-furnished property").

(2) The delivery or performance dates for this contract are based upon the expectation that Government-furnished property suitable for use (except for property furnished "as is") will be delivered to the Contractor at the times stated in the Schedule or, if not so stated, in sufficient time to enable the Contractor to meet the contract's delivery or performance dates.

(3) If Government-furnished property is received by the Contractor in a condition not suitable for the intended use, the Contractor shall, upon receipt of it, notify the Contracting Officer, detailing the facts, and, as directed by the Contracting Officer and at Government expense, either repair, modify, return, or otherwise

dispose of the property. After completing the directed action and upon written request of the Contractor, the Contracting Officer shall make an equitable adjustment as provided in paragraph (h) of this clause.

(4) If Government-furnished property is not delivered to the Contractor by the required time, the Contracting Officer shall, upon the Contractor's timely written request, make a determination of the delay, if any, caused the Contractor and shall make an equitable adjustment in accordance with paragraph (h) of this clause.

(b) Changes in Government-furnished property.

(1) The Contracting Officer may, by written notice,

(i) decrease the Government-furnished property provided or to be provided under this contract, or

(ii) substitute other Government-furnished property for the property to be provided by the Government, or to be acquired by the Contractor for the Government, under this contract. The Contractor shall promptly take such action as the Contracting Officer may direct regarding the removal, shipment, or disposal of the property covered by such notice.

(2) Upon the Contractor's written request, the Contracting Officer shall make an equitable adjustment to the contract in accordance with paragraph (h) of this clause, if the Government has agreed in the Schedule to make the property available for performing this contract and there is any--

(i) Decrease or substitution in this property pursuant to subparagraph (b)(1) above; or

(ii) Withdrawal of authority to use this property, if provided under any other contract or lease.

(c) Title in Government property. (1) The Government shall retain title to all Government-furnished property.

(2) All Government-furnished property and all property acquired by the Contractor, title to which vests in the Government under this paragraph (collectively referred to as "Government property"), are subject to the provisions of this clause. However, special tooling accountable to this contract is subject to the provisions of the Special Tooling clause and is not subject to the provisions of this clause. Title to Government property shall not be affected by its incorporation into or attachment to any property not owned by the Government, nor shall government property become a fixture or lose its identity as personal property by being attached to any real property.

(3) Title to each item of facilities and special test equipment acquired by the Contractor for the Government under this contract shall pass to and vest in the Government when its use in performing this contract commences or when the Government has paid for it, whichever is earlier, whether or not title previously vested in the Government.

(4) If this contract contains a provision directing the Contractor to purchase material for which the Government will reimburse the Contractor as a direct item of cost under this contract--

(i) Title to material purchased from a vendor shall pass to and vest in the Government upon the vendor's delivery of such material; and

(ii) Title to all other material shall pass to and vest in the Government upon--

(A) Issuance of the material for use in contract performance;

(B) Commencement of processing of the material or its use in contract performance; or

(C) Reimbursement of the cost of the material by the Government, whichever occurs first.

(d) Use of Government property. The Government property shall be used only for performing this contract, unless otherwise provided in this contract or approved by the Contracting Officer.

(e) Property Administration.

(1) The Contractor shall be responsible and accountable for all Government property provided under this contract and shall comply with Federal Acquisition Regulation (FAR) Subpart 45.5, as in effect on the date of this contract.

(2) The Contractor shall establish and maintain a program for the use, maintenance, repair, protection, and preservation of Government property in accordance with sound industrial practice and the applicable provisions of Subpart 45.5 of the FAR.

(3) If damage occurs to Government property, the risk of which has been assumed by the Government under this contract, the Government shall replace the items or the Contractor shall make such repairs as

the Government directs. However, if the Contractor cannot effect such repairs within the time required, the Contractor shall dispose of the property as directed by the Contracting Officer. When any property for which the Government is responsible is replaced or repaired, the Contracting Officer shall make an equitable adjustment in accordance with paragraph (h) of this clause.

(4) The Contractor represents that the contract price does not include any amount for repairs or replacement for which the Government is responsible. Repair or replacement of property for which the Contractor is responsible shall be accomplished by the Contractor at its own expense.

(f) Access. The Government and all its designees shall have access at all reasonable times to the premises in which any Government property is located for the purpose of inspecting the Government property.

(g) Risk of loss. Unless otherwise provided in this contract, the Contractor assumes the risk of, and shall be responsible for, any loss or destruction of, or damage to, Government property upon its delivery to the Contractor or upon passage of title to the Government under paragraph (c) of this clause. However, the Contractor is not responsible for reasonable wear and tear to Government property or for Government property properly consumed in performing this contract.

(h) Equitable adjustment. When this clause specifies an equitable adjustment, it shall be made to any affected contract provision in accordance with the procedures of the Changes clause. When appropriate, the Contracting Officer may initiate an equitable adjustment in favor of the Government. The right to an equitable adjustment shall be the Contractor's exclusive remedy. The Government shall not be liable to suit for breach of contract for--

- (1) Any delay in delivery of Government-furnished property;
- (2) Delivery of Government-furnished property in a condition not suitable for its intended use;
- (3) A decrease in or substitution of Government-furnished property; or
- (4) Failure to repair or replace Government property for which the Government is responsible.

(i) Final accounting and disposition of Government property. Upon completing this contract, or at such earlier dates as may be fixed by the Contracting Officer, the Contractor shall submit, in a form acceptable to the Contracting Officer, inventory schedules covering all items of Government property (including any resulting scrap) not consumed in performing this contract or delivered to the Government. The Contractor shall prepare for shipment, deliver f.o.b. origin, or dispose of the Government property as may be directed or authorized by the Contracting Officer. The net proceeds of any such disposal shall be credited to the contract price or shall be paid to the Government as the Contracting Officer directs.

(j) Abandonment and restoration of Contractor's premises. Unless otherwise provided herein, the Government--

(1) May abandon any Government property in place, at which time all obligations of the Government regarding such abandoned property shall cease; and

(2) Has no obligation to restore or rehabilitate the Contractor's premises under any circumstances (e.g., abandonment, disposition upon completion of need, or upon contract completion). However, if the Government-furnished property (listed in the Schedule or specifications) is withdrawn or is unsuitable for the intended use, or if other Government property is substituted, then the equitable adjustment under paragraph (h) of this clause may properly include restoration or rehabilitation costs.

(k) Communications. All communications under this clause shall be in writing.

(l) Overseas contracts. If this contract is to be performed outside of the United States and its outlying areas, the words "Government" and "Government-furnished" (wherever they appear in this clause) shall be construed as "United States Government" and "United States Government-furnished," respectively.

128. *FAR 52.245-4 GOVERNMENT-FURNISHED PROPERTY (SHORT FORM) (JUNE 2003) [For Government Property \$100,000 or Less]

(a) The Government shall delivery to the Contractor, at the time and locations stated in this contract, the Government-furnished property described in the Schedule or specifications. If that property, suitable for its intended use, is not delivered to the Contractor, the Contracting Officer shall equitably adjust affected provisions of this contract in accordance with the Changed clause when--

- (1) The Contractor submits a timely written request for an equitable adjustment; and
- (2) The facts warrant an equitable adjustment.

(b) Title to Government-furnished property shall remain in the Government. The Contractor shall use the Government-furnished property only in connection with this contract. The Contractor shall maintain adequate property control records in accordance with sound industrial practice and will make such records available for Government inspection at all reasonable times, unless the clause at Federal Acquisition Regulation 52.245-1, Property Records, is included in this contract.

(c) Upon delivery of Government-furnished property to the Contractor, the Contractor assumes the risk and responsibility for its loss or damage, except--

- (1) For reasonable wear and tear;
- (2) To the extent property is consumed in performing this contract; or
- (3) As otherwise provided for by the provisions of this contract.

(d) Upon completing this contract, the Contractor shall follow the instructions of the Contracting Officer regarding the disposition of all Government-furnished property not consumed in performing this contract or previously delivered to the Government. The Contractor shall prepare for shipment, deliver f.o.b. origin, or dispose of the Government property, as may be directed or authorized by the Contracting Officer. The net proceeds of any such disposal shall be credited to the contract price or shall be paid to the Government as directed by the Contracting Officer.

(e) If this contract is to be performed outside the United States and its outlying areas, the words "Government" and "Government-furnished" (wherever they appear in this clause) shall be construed as "United States Government" and "United States Government-furnished," respectively.

129. *FAR 52.246-12 INSPECTION OF CONSTRUCTION (AUG 1996)

(a) Definition. "Work" includes, but is not limited to, materials, workmanship, and manufacture and fabrication of components.

(b) The Contractor shall maintain an adequate inspection system and perform such inspections as will ensure that the work performed under the contract conforms to contract requirements. The Contractor shall maintain complete inspection records and make them available to the Government. All work shall be conducted under the general direction of the Contracting Officer and is subject to Government inspection and test at all places and at all reasonable times before acceptance to ensure strict compliance with the terms of the contract.

(c) Government inspections and tests are for the sole benefit of the Government and do not--

- (1) Relieve the Contractor of responsibility for providing adequate quality control measures;
- (2) Relieve the Contractor of responsibility for damage to or loss of the material before

acceptance;

- (3) Constitute or imply acceptance; or

- (4) Affect the continuing rights of the Government after acceptance of the completed work

under paragraph (i) below.

(d) The presence or absence of a Government inspector does not relieve the Contractor from any contract requirement, nor is the inspector authorized to change any term or condition of the specification without the Contracting Officer's written authorization.

(e) The Contractor shall promptly furnish, at no increase in contract price, all facilities, labor, and material reasonably needed for performing such safe and convenient inspections and tests as may be required by the Contracting Officer. The Government may charge to the Contractor any additional cost of inspection or test when work is not ready at the time specified by the Contractor for inspection or test, or when prior rejection makes reinspection or retest necessary. The Government shall perform all inspections and tests in a manner that will not unnecessarily delay the work. Special, full size, and performance tests shall be performed as described in the contract.

(f) The Contractor shall, without charge, replace or correct work found by the Government not to conform to contract requirements, unless in the public interest the Government consents to accept the work with an appropriate adjustment in contract price. The Contractor shall promptly segregate and remove rejected material from the premises.

(g) If the Contractor does not promptly replace or correct rejected work, the Government may

- (1) by contract or otherwise, replace or correct the work and charge the cost to the Contractor

or

(2) Terminate for default the Contractor's right to proceed.

(h) If, before acceptance of the entire work, the Government decides to examine already completed work by removing it or tearing it out, the Contractor, on request, shall promptly furnish all necessary facilities, labor, and material. If the work is found to be defective or nonconforming in any material respect due to the fault of the Contractor or its subcontractors, the Contractor shall defray the expenses of the examination and of satisfactory reconstruction. However, if the work is found to meet contract requirements, the Contracting Officer shall make an equitable adjustment for the additional services involved in the examination and reconstruction, including, if completion of the work was thereby delayed, an extension of time.

(i) Unless otherwise specified in the contract, the Government shall accept, as promptly as practicable after completion and inspection, all work required by the contract or that portion of the work the Contracting Officer determines can be accepted separately. Acceptance shall be final and conclusive except for latent defects, fraud, gross mistakes amounting to fraud, or the Government's rights under any warranty or guarantee.

130. *FAR 52.246-21 WARRANTY OF CONSTRUCTION (MAR 1994)

(a) In addition to any other warranties in this contract, the Contractor warrants, except as provided in paragraph (i) of this clause, that work performed under this contract conforms to the contract requirements and is free of any defect in equipment, material, or design furnished, or workmanship performed by the Contractor or any subcontractor or supplier at any tier.

(b) This warranty shall continue for a period of 1 year from the date of final acceptance of the work. If the Government takes possession of any part of the work before final acceptance, this warranty shall continue for a period of 1 year from the date the Government takes possession.

(c) The Contractor shall remedy at the Contractor's expense any failure to conform, or any defect. In addition, the Contractor shall remedy at the Contractor's expense any damage to Government-owned or controlled real or personal property, when that damage is the result of--

(1) The Contractor's failure to conform to contract requirements; or

(2) Any defect of equipment, material, workmanship, or design furnished.

(d) The Contractor shall restore any work damaged in fulfilling the terms and conditions of this clause. The Contractor's warranty with respect to work repaired or replaced will run for 1 year from the date of repair or replacement.

(e) The Contracting Officer shall notify the Contractor, in writing, within a reasonable time after the discovery of any failure, defect, or damage.

(f) If the Contractor fails to remedy any failure, defect, or damage within a reasonable time after receipt of notice, the Government shall have the right to replace, repair, or otherwise remedy the failure, defect, or damage at the Contractor's expense.

(g) With respect to all warranties, express or implied, from subcontractors, manufacturers, or suppliers for work performed and materials furnished under this contract, the Contractor shall--

(1) Obtain all warranties that would be given in normal commercial practice;

(2) Require all warranties to be executed, in writing, for the benefit of the Government, if directed by the Contracting Officer; and

(3) Enforce all warranties for the benefit of the Government, if directed by the Contracting Officer.

(h) In the event the Contractor's warranty under paragraph (b) of this clause has expired, the Government may bring suit at its expense to enforce a subcontractor's, manufacturer's, or supplier's warranty.

(i) Unless a defect is caused by the negligence of the Contractor or subcontractor or supplier at any tier, the Contractor shall not be liable for the repair of any defects of material or design furnished by the Government nor for the repair of any damage that results from any defect in Government-furnished material or design.

(j) This warranty shall not limit the Government's rights under the Inspection and Acceptance clause of this contract with respect to latent defects, gross mistakes, or fraud.

131. DFARS 252.247-7023 TRANSPORTATION OF SUPPLIES BY SEA (MAR 2000)

(a) Definitions.

As used in this clause--

(1) "Components" means articles, materials, and supplies incorporated directly into end products at any level of manufacture, fabrication, or assembly by the Contractor or any subcontractor.

(2) "Department of Defense" (DOD) means the Army, Navy, Air Force, Marine Corps, and defense agencies.

(3) "Foreign flag vessel" means any vessel that is not a U.S.-flag vessel.

(4) "Ocean transportation" means any transportation aboard a ship, vessel, boat, barge, or ferry through international waters.

(5) "Subcontractor" means a supplier, materialman, distributor, or vendor at any level below the prime Contractor whose contractual obligation to perform results from, or is conditioned upon, award of the prime contract and who is performing any part of the work or other requirement of the prime contract.

(6) "Supplies" means all property, except land and interests in land, that is clearly identifiable for eventual use by or owned by the DoD at the time of transportation by sea.

(i) An item is clearly identifiable for eventual use by the DoD if, for example, the contract documentation contains a reference to a DoD contract number or a military destination.

(ii) "Supplies" includes (but is not limited to) public works; buildings and facilities; ships; floating equipment and vessels of every character, type, and description, with parts, subassemblies, accessories, and equipment; machine tools; material; equipment; stores of all kinds; end items; construction materials; and components of the foregoing.

(7) "U.S.-flag vessel" means a vessel of the United States or belonging to the United States, including any vessel registered or having national status under the laws of the United States.

(b) (1) The Contractor shall use U.S. -flag vessels when transporting any supplies by sea under this contract.

(2) A subcontractor transporting supplies by sea under this contract shall use U.S.-flag vessel if--

(i) This Contract is a construction contract; or

(ii) The supplies being transported are--

(A) Noncommercial items; or

(B) Commercial items that--

(1) The Contractor is reselling or distributing to the Government without adding value (generally, the Contractor does not add value to items that it subcontracts for f.o.b. destination shipment);

(2) Are shipped in direct support of U.S. military contingency operations, exercises, or forces deployed in humanitarian or peacekeeping operations; or

(3) Are commissary or exchange cargoes transported outside of the Defense Transportation System in accordance with 10 U.S.C. 2643.

(c) The Contractor and its subcontractors may request that the Contracting Officer authorize shipment in foreign-flag vessels, or designate available U.S.-flag vessels, if the Contractor or a subcontractor believes that--

(1) U.S.-flag vessels are not available for timely shipment;

(2) The freight charges are inordinately excessive or unreasonable; or

(3) Freight charges are higher than charges to private persons for transportation of like goods.

(d) The Contractor must submit any request for use of other than U.S.-flag vessels in writing to the Contracting Officer at least 45 days prior to the sailing date necessary to meet its delivery schedules. The Contracting Officer will process requests submitted after such date(s) as expeditiously as possible, but the Contracting Officer's failure to grant approvals to meet the shipper's sailing date will not of itself constitute a compensable delay under this or any other clause of this contract. Requests shall contain at a minimum--

- (1) Type, weight, and cube of cargo;
- (2) Required shipping date;
- (3) Special handling and discharge requirements;
- (4) Loading and discharge points;
- (5) Name of shipper and consignee;
- (6) Prime contract number, and
- (7) A documented description of efforts made to secure U.S.-flag vessels, including points of contact (with names and telephone numbers) with at least two U.S.-flag carriers contacted. Copies of telephone notes, telegraphic and facsimile message or letters will be sufficient for this purpose.

(e) The Contractor shall, within 30 days after each shipment covered by this clause, provide the Contracting Officer and the Division of National Cargo, Office of Market Development, Maritime Administration, U.S. Department of Transportation, Washington, DC 20590, one copy of the rated on board vessel operating carrier's ocean bill of lading, which shall contain the following information--

- (1) Prime contract number;
- (2) Name of vessel;
- (3) Vessel flag of registry;
- (4) Date of loading;
- (5) Port of loading;
- (6) Port of final discharge;
- (7) Description of commodity;
- (8) Gross weight in pounds and cubic feet if available;
- (9) Total ocean freight in U.S. dollars; and
- (10) Name of the steamship company.

(f) The Contractor agrees to provide with its final invoice under this contract a representation that to the best of its knowledge and belief--

- (1) No ocean transportation was used in the performance of this contract;
- (2) Ocean transportation was used and only U.S.-flag vessels were used for all ocean shipments under the contract;
- (3) Ocean transportation was used, and the Contractor had the written consent of the Contracting Officer for all non-U.S.-flag ocean transportation; or
- (4) Ocean transportation was used and some or all of the shipments were made on non-U.S.-flag vessels without the written consent of the Contracting Officer. The Contractor shall describe these shipments in the following format;

ITEM	CONTRACT
DESCRIPTION	LINE ITEMS QUANTITY

TOTAL

(g) If the final invoice does not include the required representation, the Government will reject and return it to the Contractor as an improper invoice for the purposes of the Prompt Payment clause of this contract. In the event there has been unauthorized use of non-U.S.-flag vessels in the performance of this contract, the Contracting Officer is entitled to equitably adjust the contract, based on the unauthorized use.

(h) The Contractor shall include this clause, including this paragraph (h) in all subcontracts under this contract that--

- (1) Exceed the simplified acquisition threshold in Part 2 of the Federal Acquisition Regulation; and
- (2) Are for a type of supplies described in paragraph (b) (2) of this clause.

132. DFARS 252.247-7024 NOTIFICATION OF TRANSPORTATION OF SUPPLIES BY SEA (MAR 2000)

(a) The Contractor has indicated by the response to the solicitation provision, Representation of Extent of Transportation by Sea, that it did not anticipate transporting by sea any supplies. If, however, after the award of this contract, the Contractor learns that supplies, as defined in the Transportation of Supplies by Sea clause of this contract, will be transported by sea, the Contractor--

- (1) Shall notify the Contracting Officer of that fact; and
- (2) Hereby agrees to comply with all the terms and conditions of the Transportation of Supplies by Sea clause of this contract.

(b) (1) The Contractor shall use U.S. -flag vessels when transporting any supplies by sea under this contract.

(2) A subcontractor transporting supplies by sea under this contract shall use U.S.-flag vessel if--

(i) This Contract is a construction contract; or

(ii) The supplies being transported are--

(A) Noncommercial items; or

(B) Commercial items that--

- (1) The Contractor is reselling or distributing to the Government without adding value (generally, the Contractor does not add value to items that it subcontracts for f.o.b. destination shipment);
- (2) Are shipped in direct support of U.S. military contingency operations, exercises, or forces deployed in humanitarian or peacekeeping operations; or
- (3) Are commissary or exchange cargoes transported outside of the Defense Transportation System in accordance with 10 U.S.C. 2643.

133. FAR 52.248-3 VALUE ENGINEERING--CONSTRUCTION (FEB 2000) (ALTERNATE I (APR 1984))

(a) General. The Contractor is encouraged to develop, prepare, and submit value engineering change proposals (VECP's) voluntarily. The Contractor shall share in any instant contract savings realized from accepted VECP's, in accordance with paragraph (f) of this clause.

(b) Definitions. "Collateral costs," as used in this clause, means agency costs of operation, maintenance, logistic support, or Government-furnished property.

"Collateral savings," as used in this clause, means those measurable net reductions resulting from a VECP in the agency's overall projected collateral costs, exclusive of acquisition savings, whether or not the acquisition cost changes.

"Contractor's development and implementation costs," as used in this clause, means those costs the Contractor incurs on a VECP specifically in developing, testing, preparing, and submitting the VECP, as well as those costs the Contractor incurs to make the contractual changes required by Government acceptance of a VECP.

"Government costs," as used in this clause, means those agency costs that result directly from developing and implementing the VECP, such as any net increases in the cost of testing, operations, maintenance, and logistic support. The term does not include the normal administrative costs of processing the VECP.

"Instant contract savings," as used in this clause, means the estimated reduction in Contractor cost of performance resulting from acceptance of the VECP, minus allowable Contractor's development and implementation costs, including subcontractors' development and implementation costs (see paragraph (h) of this clause).

"Value engineering change proposal (VECP)" means a proposal that--

- (1) Requires a change to this, the instant contract, to implement; and
- (2) Results in reducing the contract price or estimated cost without impairing essential functions or characteristics; provided, that it does not involve a change--

- (i) In deliverable end item quantities only; or
 - (ii) To the contract type only.
- (c) VECP preparation. As a minimum, the Contractor shall include in each VECP the information described in paragraphs (c) (1) through (7) of this clause. If the proposed change is affected by contractually required configuration management or similar procedures, the instructions in those procedures relating to format, identification, and priority assignment shall govern VECP preparation. The VECP shall include the following:
 - (1) A description of the difference between the existing contract requirement and that proposed, the comparative advantages and disadvantages of each, a justification when an item's function or characteristics are being altered, and the effect of the change on the end item's performance.
 - (2) A list and analysis of the contract requirements that must be changed if the VECP is accepted, including any suggested specification revisions.
 - (3) A separate, detailed cost estimate for
 - (i) the affected portions of the existing contract requirement and
 - (ii) the VECP. The cost reduction associated with the VECP shall take into account the Contractor's allowable development and implementation costs, including any amount attributable to subcontracts under paragraph (h) of this clause.
 - (4) A description and estimate of costs the Government may incur in implementing the VECP, such as test and evaluation and operating and support costs.
 - (5) A prediction of any effects the proposed change would have on collateral costs to the agency.
 - (6) A statement of the time by which a contract modification accepting the VECP must be issued in order to achieve the maximum cost reduction, noting any effect on the contract completion time or delivery schedule.
 - (7) Identification of any previous submissions of the VECP, including the dates submitted, the agencies and contract numbers involved, and previous Government actions, if known.
- (d) Submission. The Contractor shall submit VECP's to the Resident Engineer at the worksite, with a copy to the Contracting Officer.
- (e) Government action.
 - (1) The Contracting Officer will notify the Contractor of the status of the VECP within 45 calendar days after the contracting office receives it. If additional time is required, the Contracting Officer will notify the Contractor within the 45-day period and provide the reason for the delay and the expected date of the decision. The Government will process VECP's expeditiously; however, it will not be liable for any delay in acting upon a VECP.
 - (2) If the VECP is not accepted, the Contracting Officer will notify the Contractor in writing, explaining the reasons for rejection. The Contractor may withdraw any VECP, in whole or in part, at any time before it is accepted by the Government. The Contracting Officer may require that the Contractor provide written notification before undertaking significant expenditures for VECP effort.
 - (3) Any VECP may be accepted, in whole or in part, by the Contracting Officer's award of a modification to this contract citing this clause. The Contracting Officer may accept the VECP, even though an agreement on price reduction has not been reached, by issuing the Contractor a notice to proceed with the change. Until a notice to proceed is issued or a contract modification applied a VECP to this contract, the Contractor shall perform in accordance with the existing contract. The decision to accept or reject all or part of any VECP is a unilateral decision made solely at the discretion of the Contracting Officer.
- (f) Sharing.
 - (1) Rates. The Government's share of savings is determined by subtracting Government costs from instant contract savings and multiplying the result by
 - (i) 45 percent for fixed-price contracts or
 - (ii) 75 percent for cost-reimbursement contracts.
 - (2) Payment. Payment of any share due the Contractor for use of a VECP on this contract shall be authorized by a modification to this contract to--
 - (i) Accept the VECP;
 - (ii) Reduce the contract price or estimated cost by the amount of instant contract savings; and

(iii) Provide the Contractor's share of savings by adding the amount calculated to the contract price or fee.

(g) Deleted.

(h) Subcontracts. The Contractor shall include an appropriate value engineering clause in any subcontract of \$50,000 or more and may include one in subcontracts of lesser value. In computing any adjustment in this contract's price under paragraph (f) of this clause, the Contractor's allowable development and implementation costs clearly resulting from a VECP accepted by the Government under this contract, but shall exclude any value engineering incentive payments to a subcontractor. The Contractor may choose any arrangement for subcontractor value engineering incentive payments; provided, that these payments shall not reduce the Government's share of the savings resulting from the VECP.

(i) Data. The Contractor may restrict the Government's right to use any part of a VECP or the supporting data by marking the following legend on the affected parts:

"These data, furnished under the Value Engineering--Construction clause of contract - _____, shall not be disclosed outside the Government or duplicated, used, or disclosed, in whole or in part, for any purpose other than to evaluate a value engineering change proposal submitted under the clause. This restriction does not limit the Government's right to use information contained in these data if it has been obtained or is otherwise available from the Contractor or from another source without limitations."

If a VECP is accepted, the Contractor hereby grants the Government unlimited rights in the VECP and supporting data, except that, with respect to data qualifying and submitted as limited rights technical data, the Government shall have the rights specified in the contract modification implementing the VECP and shall appropriately mark the data. (The terms "unlimited rights" and "limited rights" are defined in Part 27 of the Federal Acquisition Regulation.)

(End of Clause)

**134. *FAR 52.249-2 TERMINATION FOR CONVENIENCE OF THE GOVERNMENT
(FIXED-PRICE) ALTERNATE I (SEP 1996) [For Contracts Over \$100,000]**

(a) The Government may terminate performance of work under this contract in whole or, from time to time, in part if the Contracting Officer determines that a termination is in the Government's interest. The Contracting Officer shall terminate by delivering to the Contractor a Notice of Termination specifying the extent of termination and the effective date.

(b) After receipt of a Notice of Termination, and except as directed by the Contracting Officer, the Contractor shall immediately proceed with the following obligations, regardless of any delay in determining or adjusting any amounts due under this clause:

- (1) Stop work as specified in the notice.
- (2) Place no further subcontracts or orders (referred to as subcontracts in this clause) for materials, services, or facilities, except as necessary to complete the continued portion of the contract.
- (3) Terminate all subcontracts to the extent they relate to the work terminated.
- (4) Assign to the Government, as directed by the Contracting Officer, all right, title, and interest of the Contractor under the subcontracts terminated, in which case the Government shall have the right to settle or to pay any termination settlement proposal arising out of those terminations.
- (5) With approval or ratification to the extent required by the Contracting Officer, settle all outstanding liabilities and termination settlement proposals arising from the termination of subcontracts; the approval or ratification will be final for purposes of this clause.
- (6) As directed by the Contracting Officer, transfer title and deliver to the Government
 - (i) the fabricated or unfabricated parts, work in process, completed work, supplies, and other material produced or acquired for the work terminated, and
 - (ii) the completed or partially completed plans, drawings, information, and other property that, if the contract had been completed, would be required to be furnished to the Government.
- (7) Complete performance of the work not terminated.

(8) Take any action that may be necessary, or that the Contracting Officer may direct, for the protection and preservation of the property related to this contract that is in the possession of the Contractor and in which the Government has or may acquire an interest.

(9) Use its best efforts to sell, as directed or authorized by the Contracting Officer, any property of the types referred to in subparagraph (b) (6) of this clause; provided, however, that the Contractor

(i) is not required to extend credit to any purchaser and

(ii) may acquire the property under the conditions prescribed by, and at prices approved by, the Contracting Officer. The proceeds of any transfer or disposition will be applied to reduce any payments to be made by the Government under this contract, credited to the price or cost of the work, or paid in any other manner directed by the Contracting Officer.

(c) The Contractor shall submit complete termination inventory schedules no later than 120 days from the effective date of termination, unless extended in writing by the Contracting Officer upon written request of the Contractor within this 120-day period.

(d) After expiration of the plant clearance period as defined in Subpart 45.6 of the Federal Acquisition Regulation, the Contractor may submit to the Contracting Officer a list, certified as to quantity and quality, of termination inventory not previously disposed of, excluding items authorized for disposition by the Contracting Officer. The Contractor may request the Government to remove those items or enter into an agreement for their storage. Within 15 days, the Government will accept title to those items and remove them or enter into a storage agreement. The Contracting Officer may verify the list upon removal of the items, or if stored, within 45 days from submission of the list, and shall correct the list, as necessary, before final settlement.

(e) After termination, the Contractor shall submit a final termination settlement proposal to the Contracting Officer in the form and with the certification prescribed by the Contracting Officer. The Contractor shall submit the proposal promptly, but no later than 1 year from the effective date of termination, unless extended in writing by the Contracting Officer upon written request of the Contractor within this 1 year period. However, if the Contracting Officer determines that the facts justify it, a termination settlement proposal may be received and acted on after 1 year or any extension. If the Contractor fails to submit the proposal within the time allowed, the Contracting Officer may determine, on the basis of information available, the amount, if any, due the Contractor because of the termination and shall pay the amount determined.

(f) Subject to paragraph (e) of this clause, the Contractor and the Contracting Officer may agree upon the whole or any part of the amount to be paid because of the termination. The amount may include a reasonable allowance for profit on work done. However, the agreed amount, whether under this paragraph (f) or paragraph (g) of this clause, exclusive of costs shown in subparagraph (g)(3) of this clause, may not exceed the total contract price as reduced by (1) the amount of payments previously made and (2) the contract price of work not terminated. The contract shall be amended, and the Contractor paid the agreed amount. Paragraph (f) of this clause shall not limit, restrict, or affect the amount that may be agreed upon to be paid under this paragraph.

(g) If the Contractor and the Contracting Officer fail to agree on the whole amount to be paid the Contractor because of the termination of work, the Contracting Officer shall pay the Contractor the amounts determined as follows, but without duplication of any amounts agreed upon under paragraph (f) of this clause:

(1) For contract work performed before the effective date of the termination, the total (without duplication of any items) of--

(i) The cost of this work;

(ii) The cost of settling and paying termination settlement proposals under terminated subcontracts that are properly chargeable to the terminated portion of the contract if not included in subdivision (g)(1)(i) of this clause; and

(iii) A sum, as profit on subdivision (g)(1)(i) of this clause, determined by the Contracting Officer under 49.202 of the Federal Acquisition Regulation, in effect on the date of this contract, to be fair and reasonable; however, if it appears that the Contractor would have sustained a loss on the entire contract had it been completed, the Contracting Officer shall allow no profit under this subdivision (iii) and shall reduce the settlement to reflect the indicated rate of loss.

(2) The reasonable costs of settlement of the work terminated, including--

(i) Accounting, legal, clerical, and other expenses reasonably necessary for the preparation of termination settlement proposals and supporting data;

(ii) The termination and settlement of subcontracts (excluding the amounts of such settlements); and

(iii) Storage, transportation, and other costs incurred, reasonably necessary for the preservation, protection, or disposition of the termination inventory.

(h) Except for normal spoilage, and except to the extent that the Government expressly assumed the risk of loss, the Contracting Officer shall exclude from the amounts payable to the Contractor under paragraph (g) of this clause, the fair value, as determined by the Contracting Officer, of property that is destroyed, lost, stolen, or damaged so as to become undeliverable to the Government or to a buyer.

(i) The cost principles and procedures of Part 31 of the Federal Acquisition Regulation, in effect on the date of this contract, shall govern all costs claimed, agreed to, or determined under this clause.

(j) The Contractor shall have the right of appeal, under the Disputes clause, from any determination made by the Contracting Officer under paragraph (e), (g), or (l) of this clause, except that if the Contractor failed to submit the termination settlement proposal within the time provided in paragraph (e) or (l), respectively, and failed to request a time extension, there is no right of appeal.

(k) In arriving at the amount due the Contractor under this clause, there shall be deducted--

(1) All unliquidated advance or other payments to the Contractor under the terminated portion of this contract;

(2) Any claim which the Government has against the Contractor under this contract; and

(3) The agreed price for, or the proceeds of sale of, materials, supplies, or other things acquired by the Contractor or sold under the provisions of this clause and not recovered by or credited to the Government.

(l) If the termination is partial, the Contractor may file a proposal with the Contracting Officer for an equitable adjustment of the price(s) of the continued portion of the contract. The Contracting Officer shall make any equitable adjustment agreed upon. Any proposal by the Contractor for an equitable adjustment under this clause shall be requested within 90 days from the effective date of termination unless extended in writing by the Contracting Officer.

(m) (1) The Government may, under the terms and conditions it prescribes, make partial payments and payments against costs incurred by the Contractor for the terminated portion of the contract, if the Contracting Officer believes the total of these payments will not exceed the amount to which the Contractor will be entitled.

(2) If the total payments exceed the amount finally determined to be due, the Contractor shall repay the excess to the Government upon demand, together with interest computed at the rate established by the Secretary of the Treasury under 50 U.S.C. App. 1215(b)(2). Interest shall be computed for the period from the date the excess payment is received by the Contractor to the date the excess is repaid. Interest shall not be charged on any excess payment due to a reduction in the Contractor's termination settlement proposal because of retention or other disposition of termination inventory until 10 days after the date of the retention or disposition, or a later date determined by the Contracting Officer because of the circumstances.

(n) Unless otherwise provided in this contract or by statute, the Contractor shall maintain all records and documents relating to the terminated portion of this contract for 3 years after final settlement. This includes all books and other evidence bearing on the Contractor's costs and expenses under this contract. The Contractor shall make these records and documents available to the Government, at the Contractor's office, at all reasonable times, without any direct charge. If approved by the Contracting Officer, photographs, microphotographs, or other authentic reproductions may be maintained instead of original records and documents.

135. *FAR 52.249-10 DEFAULT (FIXED-PRICE CONSTRUCTION) (APR 1984)

(a) If the Contractor refuses or fails to prosecute the work or any separable part, with the diligence that will insure its completion within the time specified in this contract including any extension, or fails to complete the work within this time, the Government may, by written notice to the Contractor, terminate the right to proceed with the work (or the separable part of the work) that has been delayed. In this event, the Government may take over the work and complete it by contract or otherwise, and may take possession of and use any materials, appliances, and plant on the work site necessary for completing the work. The Contractor and its sureties shall be liable for any damage to the Government resulting from the Contractor's refusal or failure to complete the work within the specified time, whether or not the Contractor's right to proceed with the work is terminated. This liability includes any increased costs incurred by the Government in completing the work.

(b) The Contractor's right to proceed shall not be terminated nor the Contractor charged with damages under this clause, if-

(1) The delay in completing the work arises from unforeseeable causes beyond the control and without the fault or negligence of the Contractor. Examples of such causes include

- (i) acts of God or of the public enemy,
- (ii) acts of the Government in either its sovereign or contractual capacity,
- (iii) acts of another Contractor in the performance of a contract with the Government,
- (iv) fires,
- (v) floods,
- (vi) epidemics,
- (vii) quarantine restrictions,
- (viii) strikes,
- (ix) freight embargoes,
- (x) unusually severe weather, or
- (xi) delays of subcontractors or suppliers at any tier arising from unforeseeable causes beyond the control and without the fault or negligence of both the Contractor and the subcontractors or suppliers; and

(2) The Contractor, within 10 days from the beginning of any delay (unless extended by the Contracting Officer), notifies the Contracting Officer in writing of the causes of delay. The Contracting Officer shall ascertain the facts and the extent of delay. If, in the judgment of the Contracting Officer, the findings of fact warrant such action, the time for completing the work shall be extended. The findings of the Contracting Officer shall be final and conclusive on the parties, but subject to appeal under the Disputes clause.

(c) If, after termination of the Contractor's right to proceed, it is determined that the Contractor was not in default, or that the delay was excusable, the rights and obligations of the parties will be the same as if the termination had been issued for the convenience of the Government.

(d) The rights and remedies of the Government in this clause are in addition to any other rights and remedies provided by law or under this contract.

136. ENVIRONMENTAL LITIGATION (1974 NOV OCE)

(a) If the performance of all or any part of the work is suspended, delayed, or interrupted due to an order of a court of competent jurisdiction as a result of environmental litigation, as defined below, the Contracting Officer, at the request of the Contractor, shall determine whether the order is due in any part to the acts or omissions of the Contractor or a Subcontractor at any tier not required by the terms of this contract. If it is determined that the order is not due in any part to acts or omissions of the Contractor or a Subcontractor at any tier other than as required by the terms of this contract, such suspension, delay, or interruption shall be considered as if ordered by the Contracting Officer in the administration of this contract under the terms of the "Suspension of Work" clause of this contract. The period of such suspension, delay, or interruption shall be considered unreasonable, and an adjustment shall be made for any increase in the cost of performance of this contract (excluding profit) as provided in that clause, subject to all the provisions thereof.

(b) The term "environmental litigation," as used herein, means a lawsuit alleging that the work will have an adverse effect on the environment or that the Government has not duly considered, either substantively or procedurally, the effect of the work on the environment.

137. EFARS 52.249-5000 BASIS FOR SETTLEMENT OF PROPOSALS

Actual costs will be used to determine equipment cost for a settlement proposal submitted on the total cost basis under FAR 49.206-2(b). In evaluating a termination settlement proposal using the total cost basis, the following principles will be applied to determine allowable equipment costs:

(1) Actual costs for each piece of equipment, or groups of similar serial or series equipment, need not be available in the contractor's accounting records to determine total actual equipment costs.

(2) If equipment costs have been allocated to a contract using predetermined rates, those charges will be adjusted to actual costs.

(3) Recorded job costs adjusted for unallowable and unallocable expenses will be used to determine equipment operating expenses.

(4) Ownership costs (depreciation) will be determined using the contractor's depreciation schedule (subject to the provisions of FAR 31.205-11).

(5) License, taxes, storage and insurance costs are normally recovered as an indirect expense and unless the contractor charges these costs directly to contracts, they will be recovered through the indirect expense rate.

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SECTION 00800

SPECIAL CONTRACT REQUIREMENTS
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PART 1 GENERAL

Attachments:

AF Form 103 Base Civil Engineer Work Clearance Request
Project Sign Detail
General Wage Decision Nos. SD020001 and SD020006

1.1 COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK (APR 1984)

The Contractor shall be required to (a) commence work under this contract within ten (10) calendar days after the date of receipt by him of Notice to Proceed, (b) prosecute said work diligently, and (c) complete the entire work ready for use not later than 540 calendar days (which includes design, design reviews and all construction activities) after notice to proceed (NTP) (which includes design, design reviews and all construction activities). The time stated for completion of the project shall include final cleanup of the premises. (FAR 52.211-10)

1.1.1 Sequence of Design-Construction

(a) After receipt of the Contract Notice to Proceed (NTP), the Contractor shall initiate design, comply with all design submission requirements as covered in Division 01 General Requirements of the advertised Solicitation, and obtain Government review of each submission. No construction may be started, except as noted below until the Government reviews the 100 Percent Corrected Design submission and determines it satisfactory for purposes of beginning construction. The Contractor has the option to submit the design as an entirely complete design package (design analysis, plans, specifications and other design deliverables) or as two (2) concurrently submitted design packages (design analysis, plans, specifications and other design deliverables), one for the site work, foundations, and site utilities and one for all other work. Each package will require the same design submittals, design reviews and design review conferences as set forth in the Contract, with the exception of site work, foundations, and site utilities, which may proceed directly to the 100 percent design submittal. If the design packages are submitted concurrently (i.e. 60 percent design for all other work and 100 percent for site work, foundations and site utilities; 100 percent for all other work and Corrected 100 Percent for site work, foundations and site utilities; and Corrected 100 Percent for all other work and Construction Set for site work, foundations and site utilities) and Construction Set for entire project which incorporates all other work with site work, foundations and site utilities), clear delineation of deliverables is required. The Government will not grant any time extension for any design resubmittal required when, in the opinion of the Contracting Officer, the initial submission failed to meet the minimum quality requirements as set forth in the Contract.

(b) If the Government allows the Contractor to proceed with limited construction based on pending minor revisions to the reviewed 100 Percent

Corrected Design submission, no payment will be made for any in-place construction related to the pending revisions until they are completed, resubmitted and are satisfactory to the Government. Proceeding with limited construction requires written authorization by the Contracting Officer.

1.2 LIQUIDATED DAMAGES-CONSTRUCTION (SEPT 2000)

(a) If the Contractor fails to complete the work within the time specified in the contract, the Contractor shall pay liquidated damages to the Government in the amount of \$800.00 for each calendar day of delay until the work is completed or accepted.

(b) If the Government terminates the Contractor's right to proceed, liquidated damages will continue to accrue until the work is completed. These liquidated damages are in addition to excess costs of repurchase under the Termination clause. (FAR 52.211-12)

1.3 EXCEPTION TO COMPLETION TIME AND LIQUIDATED DAMAGES

In case the Contracting Officer determines that seeding, sodding, and/or planting and/or the specified maintenance thereof is not feasible during the construction period, such work will be excepted from the completion time and liquidated damages. This work shall be accomplished during the first seeding, sodding, and/or planting period and the specified maintenance period following the completion date.

1.4 COMPUTING COMPLETION DATES FOR NON-WORK PERIOD

No work will be required at the construction site during the period 15 November 2003 through 30 March 2004 inclusive. The days in this period have been included in computing the calendar days for completion of the work. The Contractor may perform work at the site during all or any part of this period upon giving prior written notice to the Contracting Officer.

Working during this non-work period shall require approval by the Contracting Officer. No time extensions will be granted for delays during this period.

1.5 DESIGN-BUILD CONTRACT - ORDER OF PRECEDENCE

(a) The contract includes the standard contract clauses and schedules current at the time of contract award. It entails (1) the solicitation in its entirety, including all drawings, cuts, and illustrations, and any amendments, and (2) the successful offeror's accepted proposal. The contract constitutes and defines the entire agreement between the Contractor and the Government. No documentation shall be omitted which in any way bears upon the terms of that agreement.

(b) In the event of conflict or inconsistency between any of the provisions of this contract, precedence shall be given in the following order:

(1) Betterments: Any portion of the accepted proposal, which both conform to and exceed the provisions of the solicitation. "Betterment" is defined as any product, component, or system, which exceeds the requirements stated in the solicitation.

(2) The provisions of the solicitation. (See also Contract Clause entitled "SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION".)

(3) All other provisions of the accepted proposal.

(4) Any design products including, but not limited to, plans, specifications, engineering studies and analyses, shop drawings, equipment installation drawings, etc.. These are "deliverable" under the contract and are not part of the contract itself. Design products must conform with all the provisions of the contract, in the order of precedence herein.

(c) Where conflicts between the solicitation requirements and the UFGS guide specifications (available as indicated in Section 01332 DESIGN AND CONSTRUCTION DELIVERABLES) exist, the solicitation requirements shall take precedence. Any installation requirements within solicitation requirements, but not contained in the UFGS guide specifications, shall be added to the specifications or shown on the drawings.

(d) Where conflicts between the Division 0 and 1 RFP sections and the attachments exist, the RFP sections shall govern. The attachments to the RFP are applicable to the extent referenced in the Division 0 and 1 RFP Sections.

1.6 RESPONSIBILITY OF THE CONTRACTOR FOR DESIGN

(a) The Contractor shall be responsible for the professional quality, technical accuracy, and the coordination of all designs, drawings, specifications, and any other non-construction services furnished by the Contractor under this contract. The Contractor shall, without additional compensation, correct or revise any errors or deficiency in its designs, drawings, specifications, and other non-construction services.

(b) Neither the Government's review, approval or acceptance of, nor payment for, the services required under this contract shall be construed to operate as a waiver of any rights under this contract or any cause of action arising out of the performance of this contract, and the Contractor shall be and remain liable to the Government in accordance with applicable law for all damages to the Government caused by the Contractor's negligent performance of any of the services described in paragraph (a) furnished under this contract.

(c) The rights and remedies of the Government provided under this contract are in addition to any other rights and remedies provided by law.

1.7 REQUEST FOR PROPOSAL (RFP) DRAWINGS

Fourteen (14) calendar days after Notice to Proceed, the Government will provide the successful Contractor a CD-ROM containing editable RFP CAD file drawings (file format and general CAD requirements are defined in Section 01332 DESIGN AND CONSTRUCTION DELIVERABLES/PROCEDURES and 01040 AS-BUILT DRAWINGS) for use in preparation of design drawing deliverables. As-built drawing requirements are specified in Section 01040 AS-BUILT DRAWINGS.

1.8 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Equipment Room Drawings; G-AO.

This submittal is not required during construction, if equipment room drawings are shown on the 100 percent design submittal.

1.9 PHYSICAL DATA (APR 1984)

Data and information furnished or referred to below is for the Contractors' information. The Government shall not be responsible for any interpretation of or conclusion drawn from the data or information by the Contractor.

a. The indications of physical conditions on the drawings and in the specifications are the result of site investigations by surveys and soil borings.. The data shown graphically and by symbol for each respective boring represents the actual geologic features observed and logged at the location given on the drawings. While the borings are representative of subsurface conditions at their respective locations and for their respective vertical reaches, local minor variations characteristic of the subsurface materials of this region could occur.

b. Weather conditions shall have been investigated by the Contractor to satisfy himself as to the hazards likely to arise therefrom. Complete weather records and reports may be obtained from the local U.S. Weather Bureau.

c. Transportation facilities shall have been investigated by the Contractor to satisfy himself as to the existence of access highways and railroad facilities. (FAR 52.236-4)

1.10 CONCURRENT CONSTRUCTION

Construction work closely related to and/or located at the site of the work under a concurrent contract, may be in progress simultaneously with work under this contract. The Contractor shall cooperate with others as necessary in the interest of timely completion of all work. In the event of interference, the Contracting Officer shall be notified immediately for resolution and his decision shall be final.

1.11 PAYMENT

1.11.1 PROMPT PAYMENT ACT

Pay requests authorized in CONTRACT CLAUSES clause: "Payments Under Fixed-Price Construction Contracts", will be paid pursuant to the clause, "Prompt Payment for Construction Contracts". Pay requests will be submitted on ENG Form 93 and 93a, "Payment Estimate-Contract Performance" and "Continuation". All information and substantiation required by the identified contract clauses will be submitted with the ENG Form 93, and the required certification will be included on the last page of the ENG Form 93a, signed by an authorized contractor official and dated when signed. The designated billing office is the Office of the Area Engineer.

1.11.2 PAYMENTS FOR MODIFICATIONS

Payments may be made for cost bearing change orders within the scope of the contract only to the extent funds are authorized in the order on a two-part

modification. Contractor pricing proposed must be submitted at the earliest possible time after the change order is issued, or at a specific time as directed by the Contracting Officer. At the discretion of the Contracting Officer, any and all payments may be withheld on the modification until the Contractor has submitted a qualifying price proposal, in as much detail as required by the Contracting Officer, and the final price has been agreed.

1.11.3 PAYMENT FOR MATERIALS DELIVERED OFFSITE (MAR 1995)

a. Pursuant to FAR clause 52.232-5, Payments Under Fixed Priced Construction Contracts, materials delivered to the contractor at locations other than the site of the work may be taken into consideration in making payments if included in payment estimates and if all the conditions of the General Provisions are fulfilled. Payment for items delivered to locations other than the work site will be limited to: (1) materials required by the technical provisions; or (2) materials that have been fabricated to the point where they are identifiable to an item of work required under this contract.

b. Such payment will be made only after receipt of paid or receipted invoices or invoices with canceled check showing title to the items in the prime contractor and including the value of material and labor incorporated into the item. Payment for materials delivered off-site includes petroleum products. (EFAR 52.232-5000)

1.12 AVAILABILITY OF UTILITY SERVICES

All reasonably required amounts of domestic water and electricity will be made available to the Contractor by the Government from existing system outlets and supplies at no cost. The Contractor shall, at his own expense, make all temporary connections and install distribution lines. The Contractor shall furnish to the Contracting Officer a complete system layout drawing showing type of materials to be used and method of installation for all temporary utility systems. All temporary lines shall be maintained by the Contractor in a workmanlike manner satisfactory to the Contracting Officer and shall be removed by the Contractor in like manner prior to final acceptance of the construction. Normal quantities of electricity and water used to make final tests of completely installed systems will be furnished by the Government.

1.13 UTILITY SERVICE INTERRUPTIONS

The Contractor shall submit written notification not less than 15 calendar days in advance of each interruption of each utility and communication service to or within existing buildings and facilities being used by others. No single outage will exceed 4 hours unless approved in writing. The time and duration of all outages will be coordinated and approved with the Using Agency by the Contracting Officer.

1.14 BASE CIVIL ENGINEER WORK CLEARANCE REQUEST (AF FORM 103), "DIGGING PERMIT

The Contractor will be responsible for coordinating a government supplied, Base Civil Engineer Work Clearance Request (AF Form 103) prior to performing digging of any type. The Contractor shall process the digging permit by coordinating with and obtaining signatures from responsible representatives of the organizations listed on the AF Form 103 prior to

obtaining final approval from the Air Force Base Civil Engineer or his approved representative. The area requested for clearance for each individual permit shall be limited to a maximum of two (2) weeks production for an individual permit. The Contractor will be given assistance, by the Government, in the execution of the initial two (2) Work Clearance Requests. Thereafter, Government assistance will be limited to an as-needed basis in the event of unusual circumstances. It will be the contractor's responsibility to coordinate the completion of the necessary AF Form 103 and arrange to have existing utilities located as indicated on the completed form, prior to the beginning of digging operations in the individual areas. This coordination is anticipated to take approximately three (3) working days to complete per request, and may require coordination with as many as twenty (20) individuals located on or near the base. A blank copy of the AF Form 103 is included at the end of this section. Any unusual delay in obtaining approval from any particular organization will be reported immediately to the Chief of Construction Management.

(a) Utility Staking Requirements: The Contractor shall layout and mark his intended utility routing before calling for field coordination by utility personnel. This shall be done a minimum of five working days in advance of when digging is expected to begin. Once all responsible utility representatives have field located crossover and/or interference points between the new utility route and existing utilities, and signed off on the digging permit to signify completion of the field coordination of the digging permit, then digging in the area represented by the digging permit may begin. Any utility service markers or markings established by the utility representatives must be maintained by the Contractor through the completion of the digging operations.

(b) Digging Operations: Digging near established interference or crossover points shall be done by hand, five (5) feet either side of the point along the intended route, in order to prevent disturbing the existing utility. If the existing utility is uncovered in the new excavation, it shall be protected from damage and movement while in the open excavation and during backfill. The contractor shall be responsible for the repairs and associated costs for repairs of any utility damaged by construction, whose location was made known to the Contractor.

1.15 TIME EXTENSIONS FOR UNUSUALLY SEVERE WEATHER

a. This clause specifies the procedure for the determination of time extensions for unusually severe weather in accordance with the contract clause entitled "Default: (Fixed-Price Construction)." In order for the Contracting Officer to award a time extension under this clause, the following conditions must be satisfied:

(1) The weather experienced at the project site during the contract period must be found to be unusually severe, that is, more severe than the adverse weather anticipated for the project location during any given month.

(2) The unusually severe weather must actually cause a delay to the completion of the project. The delay must be beyond the control and without the fault or negligence of the contractor.

b. The following schedule of monthly anticipated adverse weather delays is based on National Oceanic and Atmospheric Administration (NOAA)

or similar data for the project location and will constitute the base line for monthly weather time evaluations. The contractor's progress schedule must reflect these anticipated adverse weather delays in all weather dependent activities.

MONTHLY ANTICIPATED ADVERSE WEATHER DELAY
WORK DAYS BASED ON (5) DAY WORK WEEK

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
(14)	(10)	(08)	(05)	(06)	(07)	(04)	(04)	(02)	(02)	(05)	(10)

c. Upon acknowledgment of the Notice to Proceed (NTP) and continuing throughout the contract, the contractor will record on the daily CQC report, the occurrence of adverse weather and resultant impact to normally scheduled work. Actual adverse weather delay days must prevent work on critical activities for 50 percent or more of the contractor's scheduled work day. The number of actual adverse weather delay days shall include days impacted by actual adverse weather (even if adverse weather occurred in previous month), be calculated chronologically from the first to the last day of each month, and be recorded as full days. If the number of actual adverse weather delay days exceeds the number of days anticipated in paragraph b. above, the contracting officer will convert any qualifying delays to calendar days, giving full consideration for equivalent fair weather work days, and issue a modification in accordance with the contract clause entitled "Default (Fixed Price Construction)". (ER 415-1-15)

1.16 INSURANCE REQUIRED

In accordance with CONTRACT CLAUSES clause: "Insurance Work on a Government Installation," the Contractor shall procure the following minimum insurance:

Type	Amount
Workmen's Compensation and Employer's Liability Insurance	\$100,000
General Liability Insurance	\$500,000 per occurrence
Automobile Liability Insurance	
Bodily injury	\$200,000 per person and \$500,000 per occurrence
Property damage	\$ 20,000 per occurrence

(Coverages per FAR 28.307-2)

1.17 SECURITY REQUIREMENTS

1.17.1 Contractor's Employee Identification

The Contractor shall be responsible for furnishing to each employee and for requiring each employee engaged on the work to display such identification as may be approved and directed by the Contracting Officer. All prescribed identification shall immediately be delivered to the Contracting Officer, for cancellation upon release of any employees. When the contract involves work in restricted security areas, only employees who are U.S. citizens will be permitted to enter. Proof of U.S. citizenship is required prior to entry. When required by the Contracting Officer, the Contractor shall obtain and submit fingerprints of all persons employed or to be employed on

the project.

1.17.2 Entry Requirements

See Section 01501 ELLSWORTH AFB SECURITY REQUIREMENTS for requirements.

1.17.3 Contractor Employees Requiring Access to Automated Information Systems (AIS)

All Contractor (and subcontractor) employees (U.S. citizens and Non- U.S. citizens) working under this contract (to include grants, cooperative agreements and task orders) who require access to Automated Information Systems (AIS), (stand alone computers, network computers/systems, e-mail) shall, at a minimum, be designated into an ADP-III position (non-sensitive) in accordance with DoD 5220-22-R, Industrial Security Regulation (http://www.deskbook.osd.mil/htmlfiles/DBY_dod-7-Careers.asp).

The investigative requirements for an ADP-III position are a favorable National Agency Check (NAC), SF-85P, Public Trust Position. SF-85P is available at: <http://www.gsa.gov/Portal/home.jsp>

Under "Key Information", click on "Federal Forms",
Click on "U.S. Government Forms (GSA, Standard and Optional)"
Click on "Standard (SF) Forms"
Click on "SF 85P Questionnaire for Public Trust Positions"
SF 85P is available in either Screen-Fillable FormNet Version or Adobe Acrobat version.

Proof of a favorable NAC shall be submitted to USACE, Omaha District Security Officer, ATTN: CENWO-SL, 106 S. 15th St, Omaha, NE 68102-1618, within three (3) working days after award of any contract or task order, and shall be submitted prior to the individual being permitted access to an AIS.

a. Contractors who have a commercial or government entity (CAGE) Code and Facility Security Clearance should submit forms through their Facility Security Office, who shall forward results of the NAC to the Omaha District Security Officer (address above).

b. For those contractors who do not have a CAGE Code or Facility Security Clearance, the SF 85-P and 2 copies of the FD-258 (Fingerprint Cards) shall be completed and submitted to the Omaha District Security Officer (address above.) These must be mailed or hand-delivered, as original signatures are required. Fingerprint cards are available upon request and may be taken to any local law enforcement center for completion. For those in the Omaha, Nebraska area, fingerprint cards may be completed by contacting the Omaha District Human Resources Office, (402) 221-4072.

In accordance with Engineering Regulation, ER 380-1-18 (<http://www.usace.army.mil/inet/usace-docs/eng-regs/er.htm>), Section 4, foreign nationals who work on Corps of Engineers' contracts or task orders shall be approved by the HQUSACE Foreign Disclosure Officer or higher before beginning work on the contract/task order. This regulation includes subcontractor employees. (NOTE: exceptions to the above requirement include foreign nationals who perform janitorial and/or ground maintenance services.) The Contractor shall submit to the Omaha District Contracting Office, ATTN: (CENWO-CT) the names of all foreign nationals proposed for performance under this contract/task order, along with

documentation to verify that he/she was legally admitted into the United States and has authority to work and/or go to school in the US. Such documentation may include a US passport, Certificate of US citizenship (INS Form N-560 or N-561), Certificate of Naturalization (INS Form N-550 or N-570), foreign passport with I-551 stamp or attached INS Form I-94 indicating employment authorization, Alien Registration Receipt Card with photograph (INS Form I-151 or I-551), Temporary Resident Card (INS Form I-688), Employment Authorization Card (INS Form I-688A), Reentry Permit (INS Form I-327), Refugee Travel Document (INS Form I-571), Employment Authorization Document issued by the INS which contains a photograph (INS Form I-688B). INS forms are available at <http://www.immigration.gov/graphics/formsfee/index.htm>.

Compliance with this provision is mandatory (only if AIS access is required). Offeror should check the appropriate box below and return with offer or quote to Contracting Office.

[] HAVE FAVORABLE SF-85P(s)*
[] SF85-P(s) TO BE INITIATED UPON AWARD
[] SF85-P(s) PAPERWORK IN PROGRESS
[] DO NOT INTEND TO COMPLY

*Must be accomplished for each employee who will be accessing Government AIS under this action.

(End of Provision)(PIL 2003-06, 19 Feb 03)

1.18 CONTRACTOR QUALITY CONTROL (CQC)

See Section 01451A Contractor Quality Control.

1.19 NONDOMESTIC CONSTRUCTION MATERIALS

The List of nondomestic construction materials or their components included in the list set forth in paragraph 25.104 of the Federal Acquisition Regulation does not apply to the requirements of the contract clause entitled "Buy American Act Construction Materials".

1.20 NOTICE OF PRIORITY RATING FOR NATIONAL DEFENSE USE (SEP 1990)

Any contract awarded as a result of this solicitation will be a DO rated order certified for national defense use under the Defense Priorities and Allocations System (DPAS) (15 CFR 700), and the Contractor will be required to follow all of the requirements of this regulation. (FAR 52.211-14)

1.21 DAILY WORK SCHEDULES

In order to closely coordinate work under this contract, the Contractor shall prepare a written agenda/meeting minutes and attend a weekly coordination meeting with the Contracting Officer and Using Service at which time the Contractor shall submit for coordination and approval, his proposed daily work schedule for the next two week period. The Contractor shall provide a copy of modifications (MODs), Serial Letters, Requests for Information (RFIs) and any other information that is needed in the minutes of the meeting. Required temporary utility services, time and duration of interruptions, and protection of adjoining areas shall be included with the Contractor's proposed 2-week work schedule. At this meeting, the Contractor shall also submit his schedule of proposed dates and times of all preparatory inspections to be performed during the next 2 weeks. The

items of work listed on the proposed 2-week schedule are to be keyed to the NAS by activity number and description for each activity anticipated to be performed during the next 2-week period. Coordination action by the Contracting Officer relative to these schedules will be accomplished during these weekly meetings. Daily reports shall be completed and given to the Contracting Officer or Representative within 24 hours of work

1.22 EQUIPMENT OWNERSHIP AND OPERATING EXPENSE SCHEDULE (MAR 1995)

a. This statement shall become operative only for negotiated contracts where cost or pricing data is requested, and for modifications to sealed bid or negotiated contracts where cost or pricing data is requested. This clause does not apply to terminations. See 52.249-5000, Basis for settlement of proposals and FAR Part 49.

b. Allowable cost for construction and marine plant and equipment in sound workable condition owned or controlled and furnished by a Contractor or subcontractor at any tier shall be based on actual cost data for each piece of equipment or groups of similar serial and series for which the Government can determine both ownership and operating costs from the Contractor's accounting records. When both ownership and operating costs cannot be determined for any piece of equipment or groups of similar serial or series of equipment from the Contractor's accounting records, costs for that equipment shall be based upon the applicable provisions of EP 1110-1-8, "Construction Equipment Ownership and Operating Expense Schedule," Region IV. Copies of each regional schedule may be obtained through the following internet site:

<http://www.usace.army.mil/inet/usace-docs/eng-pamphlets/ep.htm>. Working conditions shall be considered to be average for determining equipment rates using the schedule unless specified otherwise by the Contracting Officer. For equipment not included in the schedule, rates for comparable pieces of equipment may be developed using the formula provided in the schedule. For forward pricing, the Schedule in effect at the time of negotiations shall apply. For retrospective pricing, the Schedule in effect at the time the work was performed shall apply.

c. Equipment rental costs are allowable, subject to the provisions of FAR 31.105(d)(ii) and FAR 31.205-36. Rates for equipment rented from an organization under common control, lease-purchase arrangements, and sale-leaseback arrangements will be determined using the schedule, except that actual rates will be used for equipment leased from an organization under common control that has an established practice of leasing the same or similar equipment to unaffiliated lessees.

d. When actual equipment costs are proposed and the total amount of the pricing action exceeds the small purchase threshold, the contracting officer shall request the contractor to submit either certified cost or pricing data, or partial/limited data as appropriate. The data shall be submitted on Standard Form 1411, Contract Pricing Proposal Cover Sheet. (EFARS 52.231-5000)

1.23 AS-BUILT DRAWINGS

See SECTION 01040 - AS-BUILT DRAWINGS

1.24 SIGN

On commencement of work on this project, the Contractor shall furnish and erect the temporary sign in the location selected by the Contracting

Officer near the project site. The Contractor shall maintain the sign in good condition through the project construction period. Upon completion of the project the Contractor shall remove the sign from the premises. The project sign shall conform to the attached construction sign detail. A decal of the "Engineer Castle" and the U. S. Air Force emblem will be furnished the Contractor upon request.

1.25 EQUIPMENT ROOM DRAWINGS

Prior to construction, the Contractor shall prepare and submit room plans (see paragraph SUBMITTALS for conditions regarding this submittal under Design/Build procurement) for all mechanical, electrical, and communication rooms or similar areas. The plans shall be consolidated for all trades, shall be to scale, and shall show all pertinent structural features. All equipment shall be accessible and laid out in a good design and workmanship manner and layouts for communications rooms shall be completed as early as possible. In addition, other items such as doors, windows, and cabinets required for installation and which will affect the available space, will be shown. All mechanical and electrical equipment and accessories shall be shown to scale in plan and elevation and/or section in their installed positions. All duct work and piping shall be shown.

1.26 CONTRACTOR FURNISHED EQUIPMENT DATA

See Section 01200 Warranty of Construction and Design for Contractor Furnished Equipment Data to be submitted as part of the Warranty Equipment Booklet.

1.27 NOT USED

1.28 PERFORMANCE OF WORK BY CONTRACTOR (APR 1984)

The Contractor shall perform on the site, and with its own organization, work equivalent to at least twenty (20) percent of the total amount of work to be performed under the contract. This percentage may be reduced by a supplemental agreement to this contract if, during performing the work, the Contractor requests a reduction and the Contracting Officer determines that the reduction would be to the advantage of the Government. (FAR 52.236-1)

1.29 PARTNERING

a. The Government intends to encourage the formation of a cohesive partnership with the Contractor. This partnership will be structured to draw on the strengths of each organization to identify and achieve reciprocal goals. The objective is effective contract performance in achieving completion within budget, on schedule and in accordance with plans and specifications. This partnership between the Contractor and the Government will be voluntary and its implementation will not be part of the contract requirements nor will it result in a change to contract price or terms.

b. It is anticipated that immediately after the preconstruction conference, the appropriate Contractor's key personnel and Government key personnel will attend a 2-3 hours informal team building workshop at Ellsworth AFB.

1.30 PROFIT

a. Weighted guidelines method of determining profit shall be used on any equitable adjustment change order or modification issued under this contract. The profit factors shall be as follows:

Factor	Rate	Weight	Value
Degree of Risk	20	See Item	
Relative difficulty of work	15	b. below	
Size of Job	15		
Period of performance	15		
Contractor's investment	5		
Assistance by Government	5		
Subcontracting	25		
	100		

b. Based on the circumstances of each procurement action, each of the above factors shall be weighted from .03 to .12 as indicated below. The value shall be obtained by multiplying the rate by the weight. The value column when totalled indicates the fair and reasonable profit percentage under the circumstances of the particular procurement.

(1) Degree of Risk. Where the work involves no risk or the degree of risk is very small, the weighting should be .03; as the degree of risk increases, the weighting should be increased up to a maximum of .12. Lump sum items will have, generally, a higher weighted value than the unit price items for which quantities are provided. Other things to consider: the portion of the work to be done by subcontractors, nature of work, where work is to be performed, reasonableness of negotiated costs, amount of labor included in costs, and whether the negotiation is before or after performance of work.

(2) Relative Difficulty of Work. If the work is most difficult and complex, the weighting should be .12 and should be proportionately reduced to .03 on the simplest of jobs. This factor is tied in to some extent with the degree of risk. Some things to consider: the nature of the work, by whom it is to be done, where, and what is the time schedule.

(3) Size of Job. All work not in excess of \$100,000 shall be weighted at .12. Work estimated between \$100,000 and \$5,000,000 shall be proportionately weighted from .12 to .05.

(4) Periods of Performance. Jobs in excess of 24 months are to be weighted at .12. Jobs of lesser duration are to be proportionately weighted to a minimum of .03 for jobs not to exceed 30 days. No weight where additional time not required.

(5) Contractor's Investment. To be weighted from .03 to .12 on the basis of below average, average, and above average. Things to consider: amount of subcontracting, mobilization payment item, Government furnished property, equipment and facilities, and expediting assistance.

(6) Assistance by Government. To be weighted from .12 to .03 on the basis of average to above average. Things to consider: use of Government-owned

property, equipment and facilities, and expediting assistance.

(7) Subcontracting. To be weighted inversely proportional to the amount of subcontracting. Where 80 percent or more of the work is to be subcontracted, the weighting is to be .03 and such weighting proportionately increased to .12 where all the work is performed by the Contractor's own forces.

1.31 LABOR CONDITIONS APPLICABLE TO TEMPORARY FACILITIES

It is the position of the Department of Defense that the Davis-Bacon Act, 40 U.S.C. 276a is applicable to temporary facilities such as batch plants, sandpits, rock quarries, and similar operations, located off the immediate site of the construction but set up exclusively to furnish required materials for a construction project on the site of the work. Clause "Payrolls and Basic Records" of the CONTRACT CLAUSES is applicable to such operations.

1.32 DRAWING SCALES

All scales shown on the RFP project drawings are based on a standard drawing size of 28" x 40". If any other size drawings are furnished or plotted, the contractor shall adjust the scales accordingly. The Contractor shall also advise his sub-contractors of the above.

1.33 WAGE RATE APPLICATION

1.33.1 Building Schedule

Applicable to all work required within 5 feet outside the building lines.

1.33.2 Heavy and Highway Schedule

Applicable to all work required beyond 5 feet outside the building.

1.34 (FAR 52.222-23) NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (FEB 1999))

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Goals for Minority Participation
for Each Trade

Goals for Female Participation
for Each Trade

3.4

6.9

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area

where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance, U.S. Department of Labor, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the -

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is Rapid City SMSA-6660, which Pennington county is a part of.

1.35 FEDERAL HOLIDAYS

The following Federal legal holidays are observed by this installation:

New Year's Day	1 January
Martin Luther King's Birthday	Third Monday in January
President's Day	Third Monday in February
Memorial Day	Last Monday in May
Independence Day	4 July
Labor Day	First Monday in September
Columbus Day	Second Monday in October
Veterans Day	11 November
Thanksgiving Day	Fourth Thursday in November
Christmas Day	25 December

If a wage determination applies the number of holidays specified on it, it has priority over this clause.

1.36 BASE HOURS

Base operation hours are 6:30 a.m. to 6:00 p.m. daily (Monday through Friday), excluding federal holidays. Access to the base during other times must be requested in writing from the Contracting Officer and will be granted only for extenuating circumstances.

1.37 UPKEEP OF ROADWAYS AND CONSTRUCTION SITE WITHIN A MILITARY INSTALLATION

In addition to the requirements of Contract Clauses clause "Operations and Storage Areas", the Contractor shall comply with the following requirements. All military installation roads, public roads and streets used or affected by construction operations shall be kept open to traffic at all times during the construction period unless otherwise specified or directed by the Contracting Officer. The Contractor shall keep military installation roads and areas adjacent to the construction site free of debris including litter, waste construction material and mud which are generated by construction operations. Cleaning of roads and areas affected by construction operations shall be done on a continual basis. Drainage from the roads shall not be obstructed by construction work. Road damage resulting from construction operations shall be repaired by the contractor to the satisfaction of the Contracting Officer at no additional cost to the Government.

The Contractor shall keep the construction site free of debris and litter. The Contractor shall patrol and clean the construction site daily.

PART 2 NOT USED

PART 3 NOT USED

-- End of Section --

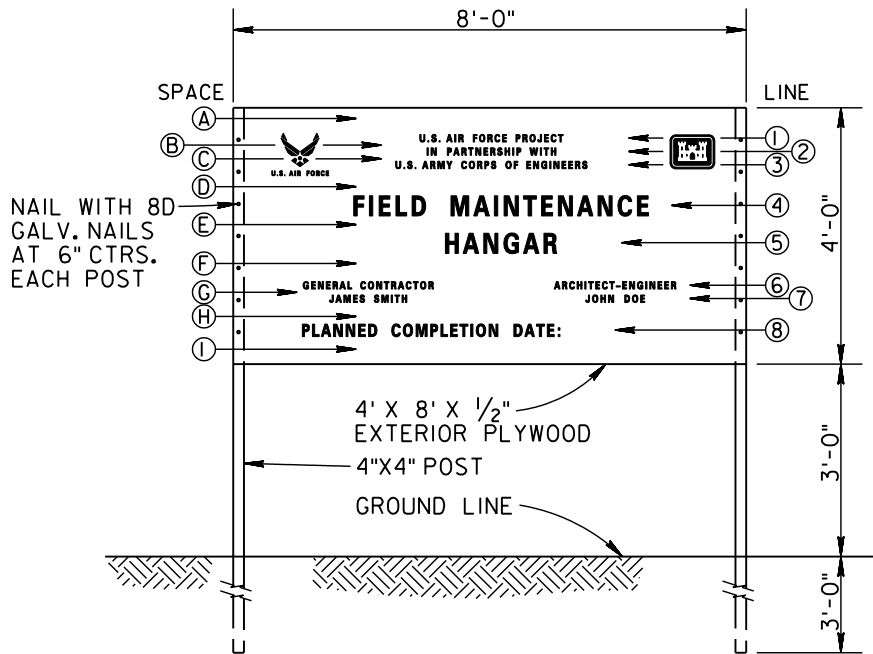
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BASE CIVIL ENGINEERING WORK CLEARANCE REQUEST <i>(See Instructions on Reverse)</i>										DATE PREPARED	
1. Clearance is requested to proceed with work at _____ on Work Order No. _____, Contract No. _____, involving excavation or utility disturbance per attached sketch. This area <input type="checkbox"/> has <input type="checkbox"/> has not been staked or clearly marked.											
2. TYPE OF FACILITY/WORK INVOLVED											
A. PAVEMENTS		D. FIRE DETECTION & PROTECTION SYSTEMS		G. AIRCRAFT OR VEHICULAR TRAFFIC FLOW							
B. DRAINAGE SYSTEMS		E. UTILITY		OVERHEAD		UNDERGROUND		H. SECURITY			
C. RAILROAD TRACKS		F. COMM		OVERHEAD		UNDERGROUND		I. OTHER			
3. DATE CLEARANCE REQUIRED						4. DATE OF CLEARANCE					
5. SIGNATURE OF REQUESTING OFFICIAL						6. TELEPHONE NO.			7. ORGANIZATION		
ORGANIZATION				REMARKS <i>(Use Reverse for additional comments)</i>				REVIEWER'S NAME AND INITIALS			
8. B A S E C I V I L E N G I N E E R I N G	A. ELECTRICAL DISTRIBUTION										
	B. STEAM DISTRIBUTION										
	C. WATER DISTRIBUTION										
	D. POL DISTRIBUTION										
	E. SEWER DISTRIBUTION										
	F. ENVIRONMENTAL										
	G. PAVEMENTS/ GROUNDS										
	H. FIRE PROTECTION										
	I. ZONE _____										
	J. OTHER <i>(Specify)</i>										
9. SECURITY POLICE											
10. SAFETY											
11. COMMUNICATIONS											
12. BASE OPERATIONS											
13. CABLE TV											
14. COMMERCIAL UTILITY COMPANY											
<input type="checkbox"/> TELEPHONE											
<input type="checkbox"/> GAS											
<input type="checkbox"/> ELECTRIC											
15. OTHER <i>(Specify)</i> _____											
16. REQUESTED CLEARANCE <input type="checkbox"/> APPROVED <input type="checkbox"/> DISAPPROVED											
17. TYPED NAME AND SIGNATURE OF APPROVING OFFICER <i>(Chief of Operations Flight or Chief of Engineering Flight)</i>										17a. DATE SIGNED	

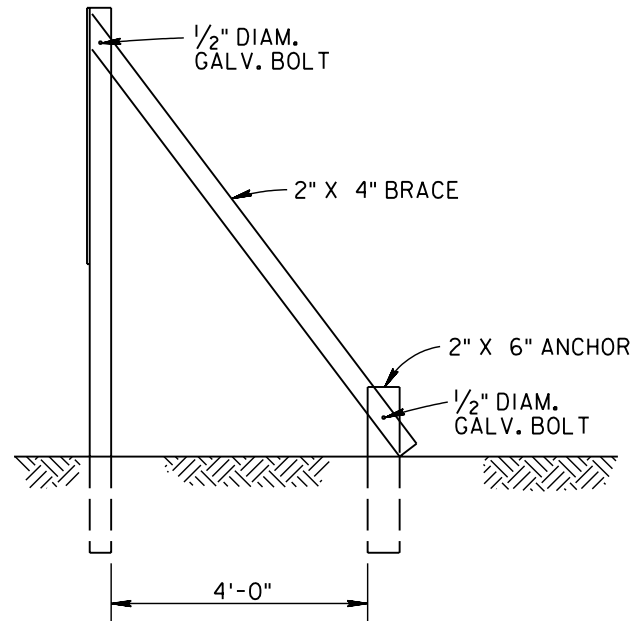
INSTRUCTIONS

The BCE work clearance request is used for any work (contract or in-house) that may disrupt aircraft or vehicular traffic flow, base utility services, protection provided by fire and intrusion alarm system, or routine activities of the installation. This form is used to coordinate the required work with key base activities and keep customer inconvenience to a minimum. It is also used to identify potentially hazardous work conditions in an attempt to prevent accidents. The work clearance request is processed just prior to the start of work. If delays are encountered and the conditions at the job site change (or may have changed) this work clearance request must be reprocessed.

18. REMARKS. *(This section must describe specific precautionary measure to be taken before and during work accomplishment. Specific comments concerning the approved method of excavation, hand or powered equipment, should be included.)*



FRONT VIEW



END VIEW

U.S. AIR FORCE MCP PROJECTS PROJECT SIGN DETAILS

NO SCALE

SCHEDULE

SPACE	HEIGHT	LINE	DESCRIPTION	LETTER HEIGHT	STROKE
A	5"	1	U.S. AIR FORCE PROJECT	1.5"	3/16"
B	1"	2	IN PARTNERSHIP WITH	1.5"	3/16"
C	1"	3	U.S. ARMY CORPS OF ENGINEERS	1.5"	3/16"
D	5"	4	PROJECT NAME	4"	1/2"
E	3"	5	PROJECT NAME CONT'D (IF REQ'D)	4"	1/2"
F	5"	6	GENERAL CONTRACTOR/A-E	1.5"	3/16"
G	1"	7	GENERAL CONTRACTOR/A-E	1.5"	3/16"
H	4"	8	PLANNED COMPLETION DATE	2.5"	1/4"
I	5"				

NOTES:

1. POSTS SHALL BE S4S.
2. PLYWOOD SHALL BE EXTERIOR TYPE, A-C GRADE.
3. BEFORE PAINTING, SURFACE SHALL BE CLEAN, DRY, FREE OF GREASE AND SANDED.
4. PAINT WITH ONE EXTERIOR OIL PRIME COAT AND EXTERIOR TYPE ALKYD, CONFORMING TO MASTER PAINTERS INSTITUTE MPI-9, MPI GLOSS LEVEL 6. COLOR SHALL MATCH SHERWIN WILLIAMS SW 2175.
5. ALL LETTERING SHALL BE EXTERIOR TYPE ALKYD. COLOR SHALL MATCH SHERWIN WILLIAMS SW 1900.
6. DECALOMANIA FOR CORPS OF ENGINEERS INSIGNIA AND U.S. AIR FORCE EMBLEM WILL BE FURNISHED BY THE CONTRACTING OFFICER FOR INSTALLATION BY THE CONTRACTOR.
7. ALL EXPOSED WOOD (POSTS, SUPPORTS, BACK, ETC.) SHALL BE PAINTED THE SAME BACKGROUND COLOR AS THE SIGN.
8. LETTERING STYLE SHALL BE EITHER HELIOS EXTRA BOLD CONDENSED, HELIOS BOLD II, HELVETICA BLACK ROMAN, OR HELVETICA BOLD ROMAN.

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General Decision Number SD020001

General Decision Number SD020001
Superseded General Decision No. SD010001

State: South Dakota

Construction Type:
HEAVY
HIGHWAY

County(ies):

AURORA	EDMUNDS	MCCOOK
BEADLE	FALL RIVER	MCPHERSON
BENNETT	FAULK	MEADE
BON HOMME	GRANT	MELLETTTE
BROOKINGS	GREGORY	MINER
BROWN	HAAKON	MOODY
BRULE	HAMLIN	PERKINS
BUFFALO	HAND	POTTER
BUTTE	HANSON	ROBERTS
CAMPBELL	HARDING	SANBORN
CHARLES MIX	HUGHES	SHANNON
CLARK	HUTCHINSON	SPINK
CLAY	HYDE	STANLEY
CODINGTON	JACKSON	SULLY
CORSON	JERAULD	TODD
CUSTER	JONES	TRIPP
DAVISON	KINGSBURY	TURNER
DAY	LAKE	UNION
DEUEL	LAWRENCE	WALWORTH
DEWEY	LYMAN	YANKTON
DOUGLAS	MARSHALL	ZIEBACH

Heavy and Highway Construction Projects
Modification Number Publication Date
 0 03/01/2002

COUNTY(ies):

AURORA	EDMUNDS	MCCOOK
BEADLE	FALL RIVER	MCPHERSON
BENNETT	FAULK	MEADE
BON HOMME	GRANT	MELLETTE
BROOKINGS	GREGORY	MINER
BROWN	HAAKON	MOODY
BRULE	HAMLIN	PERKINS
BUFFALO	HAND	POTTER
BUTTE	HANSON	ROBERTS
CAMPBELL	HARDING	SANBORN
CHARLES MIX	HUGHES	SHANNON
CLARK	HUTCHINSON	SPINK
CLAY	HYDE	STANLEY
CODINGTON	JACKSON	SULLY
CORSON	JERAULD	TODD
CUSTER	JONES	TRIPP
DAVISON	KINGSBURY	TURNER
DAY	LAKE	UNION
DEUEL	LAWRENCE	WALWORTH
DEWEY	LYMAN	YANKTON
DOUGLAS	MARSHALL	ZIEBACH

SUSD3001A 05/26/1998

	Rates	Fringes
CARPENTERS/FORM BUILDERS	12.67	
CONCRETE FINISHERS	13.05	
ELECTRICIANS	13.57	
LABORERS:		
Group 1	8.49	
Group 2	10.74	
Group 3	11.06	
Group 4	12.95	

LABORER CLASSIFICATIONS

GROUP 1 - Air Tool Operator; Common Laborer; Flag Person;
Landscape Worker; & Pilot Car Operator
GROUP 2 - Form Builder Tender; Mechanic Tender; & Pipe Layer
(Except Culvert)
GROUP 3 - Asphalt Plant Tender; Pile Driver Leadsman; & Form
Setter
GROUP 4 - Grade Checker

PAINTERS 9.64

POWER EQUIPMENT OPERATORS:

Group 1	9.88
Group 2	11.01
Group 3	11.57
Group 4	12.62
Group 5	13.98

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1 - Concrete Paving Cure Machine; Concrete Paving Joint
Sealer; Conveyor; Tractor (Farm-type with Attachments);
Materials Spreader; & Self-propelled Broom
GROUP 2 - Truck Type Auger; Bulldozer, 80 H.P. or Less;
Concrete Paving Saw; Front End Loader, 1.25 Cubic Yards or
Less; Pneumatic Tired Tractor or Crawler (Includes Water Wagon
& Power Spray Units); Self-propelled Roller (Except Hot Mix);
Sheepsfoot/50 Ton Pneumatic Roller; Wagon Drill; & Air Trac
GROUP 3 - Asphalt Distributor; Backhoe, 1.25 Cubic Yards or

Less; Bulldozer, Over 80 H.P.; Concrete Paving Finishing Machine; Crusher (May include internal Screening Plant); Euclid or Dumpster; Front End Loader, Over 1.25 Cubic Yards; Rough Motor Grader; Push Tractor; & Self-propelled Hot-Mix Roller
GROUP 4 - Asphalt Paving Machine Screed-Asphalt Paving Machine; Backhoe, Over 1.25 Cubic Yards; Crane, Derrick, Dragline, Pile Driver or Shovel, 1.25 Cubic Yards or Less; Maintenance Mechanic; Oiler & Greaser; & Scraper
GROUP 5 - Asphalt Plant; Automatic Fine Grader; Milling Machine; Concrete Batch Plant; Crane, Derrick, Dragline, Pile Driver or Shovel, Over 1.25 Cubic Yards; Heavy Duty Mechanic; & Finish Motor Grader

TRUCK DRIVERS:

Group 1	10.04
Group 2	11.59

TRUCK DRIVER CLASSIFICATIONS

GROUP 1 - Tandem Truck Without Trailer or Pup; Single Axle Truck (Over 1 ton) with Trailer
GROUP 2 - Semi-Tractor & Trailer; Tandem Truck with Pup

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.
=====

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(v)).

In the listing above, the "SU" designation means that rates listed under that identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

General Decision Number SD020006
Superseded General Decision No. SD010006

State: South Dakota

Construction Type:

BUILDING

County(ies):

BENNETT	HAAKON	MELLETTTE
BUTTE	HARDING	PERKINS
CORSON	JACKSON	SHANNON
CUSTER	JONES	STANLEY
DEWEY	LAWRENCE	TODD
FALL RIVER	LYMAN	TRIPP
GREGORY	MEADE	ZIEBACH

BUILDING CONSTRUCTION PROJECTS (Does not include single family
homes and apartments up to and including four (4) stories)

Modification Number	Publication Date
0	03/01/2002
1	04/05/2002
2	05/17/2002
3	01/17/2003
4	04/04/2003

COUNTY(ies):

BENNETT	HAAKON	MELLETTE
BUTTE	HARDING	PERKINS
CORSON	JACKSON	SHANNON
CUSTER	JONES	STANLEY
DEWEY	LAWRENCE	TODD
FALL RIVER	LYMAN	TRIPP
GREGORY	MEADE	ZIEBACH

BRSD0001C 05/01/2000

	Rates	Fringes
JONES & STANLEY (Part) COUNTIES:		
BRICKLAYERS	20.00	4.60

BRSD0002A 05/01/1999

	Rates	Fringes
GREGORY, LYMAN & TRIPP COUNTIES:		
BRICKLAYERS	23.40	1.50

BRSD0003B 07/01/2002

	Rates	Fringes
CORSON & DEWEY COUNTIES:		
BRICKLAYERS	24.24	1.50

* BRSD0004A 05/01/2002

	Rates	Fringes
BENNETT, BUTTE, CUSTER, FALL RIVER, HAAKON, HARDING, JACKSON, LAWRENCE, MEADE, MELLETTE, PERKINS, SHANNON, TODD & ZIEBACH COUNTIES:		
BRICKLAYERS	23.60	1.50

* SFSD0669A 04/01/2003

	Rates	Fringes
SPRINKLER FITTERS	24.94	6.60

SHEE0010R 01/01/2002

	Rates	Fringes
SHEET METAL WORKERS (HVAC WORK, Including Duct Work & Installation of systems):		
Sheet Metal Jobs over \$500,000	18.50	3.29
All Other Sheet Metal Work	16.97	1.98

SUSD1003A 03/20/2000

	Rates	Fringes
CARPENTERS (Including Form Building & Metal Stud Work)		
10.92 1.67		
CONCRETE FINISHERS/CEMENT MASONS	10.58	1.68
ELECTRICIANS (Including Low Voltage Wiring for Fire Alarms, Sound Systems, Phones & Computers)	13.96	1.47
LABORERS:		
Common	7.74	
Brick Tender	9.00	
PAINTERS: Brush & Spray	12.00	
PLUMBERS, Excluding HVAC Work	14.02	1.90
POWER EQUIPMENT OPERATORS:		
Front End Loader	10.42	

WELDERS - Receive rate prescribed for craft performing operation
to which welding is incidental.
=====

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the scope of the classifications listed may be added after
award only as provided in the labor standards contract clauses
(29 CFR 5.5(a)(1)(ii)).

In the listing above, the "SU" designation means that rates
listed under that identifier do not reflect collectively
bargained wage and fringe benefit rates. Other designations
indicate unions whose rates have been determined to be
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WAGE DETERMINATION APPEALS PROCESS

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(See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
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The request should be accompanied by a full statement of the
interested party's position and by any information (wage payment
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requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an
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Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U. S. Department of Labor
200 Constitution Avenue, N. W.

Washington, D. C. 20210

- 4.) All decisions by the Administrative Review Board are final.
END OF GENERAL DECISION

SECTION TABLE OF CONTENTS

DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01001

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 - 1.1.2 Project Site
 - 1.1.3 Building Arrangement
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 - 1.2.2 Codes
 - 1.2.3 Constructability
 - 1.2.4 Building Durability
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PART 3 NOT USED

-- End of Section Table of Contents --

SECTION 01001

SUMMARY OF WORK

PART 1 SUMMARY OF WORK

1.1 FUNCTION

1.1.1 Function of Facility

The new 37th B1-B Squadron Operations Facility located at Ellsworth Air Force Base, South Dakota, will provide an operational facility for the 37th B1 Bomber Squadron.

The facility will provide adequate support for offices, administrative support, parking, and support areas. Included with the construction of this facility are construction of access drives, sidewalks, additional POV parking areas, and utilities.

The project includes all design and construction necessary to provide a complete and usable facility, as described herein. Design and construction of the new 37th B1-B Squadron Operations Facility shall be in compliance with the latest scope criteria and applicable code requirements. The work includes all utility systems, HVAC and EMCS systems, a complete fire protection system and the storage, assembly and installation of all furnishings, fixtures and equipment as described herein. Also, the facility design includes various support service functions and group activity rooms.

The removal of Buildings B7221, B7226, B7238 and B7503 are included in the Base Bid of this project. Remediation of environmental hazards (asbestos, PCB's and flourescent light tubes) shall also be included in the Base Bid of this project, and must be completed prior to demolition of these buildings; see the Hazardous Materials Survey Report (Attachment 13) for description of items.

1.1.2 Project Site

The site for the new facility is located along Bergstrom Drive adjacent to the flight line at Ellsworth AFB.

1.1.3 Building Arrangement

Overall configuration of the facility is to be compatible with the other buildings located in the EAFB Flightline Support District, especially the 34th Bomber Squadron Operations Facility. The new facility will be a single story building. The herewith-provided preliminary drawings outline the facility and room configurations for the building in detail.

1.2 GOALS AND OBJECTIVES

Based on user interviews and a predesign conference the following requirements were defined.

1.2.1 Functional Objectives

The new facility is being constructed to consolidate functions from four separate buildings into one cohesive building to enhance coordination and efficiencies between the various personnel groups.

1.2.2 Codes

All applicable Building codes and life safety codes shall be met or exceeded. The more stringent code requirement shall be followed when apparent conflict between codes. Questions involving any conflicts between these codes which cannot be resolved by following the most stringent requirement will be presented, with recommendations for resolution, to the Government. When any building code or standard refers to the authority having "jurisdiction" or "governmental authority", this reference shall be interpreted as referring to the Contracting Officer (CO).

1.2.3 Constructability

The new facility is to be clad in materials that are consistent with the architectural theme established for buildings located in the EAFB Flightline Support District, especially the 34th Bomber Squadron Operations Facility. These materials include brick, precast concrete, metal wall and roof panels, translucent wall panels, glazing systems and standard seam metal roofing. The structural system shall be as described in Section 01005, STRUCTURAL REQUIREMENTS.

1.2.4 Building Durability

Materials and equipment will be chosen for their durability and ease of maintenance. The building design will conserve manmade resources and energy usage.

1.2.5 Changes to Criteria Requirements

This Request for Proposal provides requirements expected of the design-build Contractor during the design and construction of this project.

The RFP drawings presents an overall design concept of the project, provides useful project information, establishes some definition of the systems to be used and incorporates requirements expected by the Using Service.

It shall be the responsibility of the design-build Contractor to assemble the best value-priced construction systems for this project that meet or exceed the design criteria set forth herein.

Offerors should not consider alternate design criteria during proposal preparation. After Contract award, the Contractor may submit for approval changes to the design criteria. The Contracting Officer reserves the right to disapprove any and all changes.

1.2.6 Sustainable Design Technology

To the extent referenced in the solicitation, the Contractor shall provide a facility which utilizes sustainable design principles. The basic objectives are to:

- 1) Reduce consumption of energy, land and other non-renewable resources.

- 2) Minimize waste of materials, water, and other limited resources.
- 3) Consider the cost of energy dollars while creating livable, healthy and productive environments that maintain comfort, health, and safety for the people using the facility.

Green Building Technology and Whole Building Design are referenced names involving sustainable design principles.

Related References:

ETL 1110-3-491 (1 May 2001) Sustainable Design for Military Facilities

Web Sites to Consider for Sustainable Design:

EPA Comprehensive Procurement Guidelines (available at <http://www.epa.gov/cpg>)

U.S. Green Building Council: <http://www.usgbc.org>

Whole Building Design Guide: <http://www.wbdg.org/>

Energy Star Building Program: <http://www.energystar.gov>

Leadership in Energy and Environmental Design Green Building Rating System Criteria (LEED) U.S. Green Building Council: http://www.usgbc.org/LEED/LEED_main.asp

U. S. Department of Energy website:

<http://www.eere.energy.gov/building/html>

Contractor shall coordinate with Base personnel and applicable Air Force personnel for any specific requirements relating to sustainable design. The Leeds Green Building Rating System Version 2.1, Project Checklist, available from the U.S. Green Building Council, shall be completed by the contractor and submitted to the government for information only. The buildings in this project will not require LEEDS certification.

1.3 FACILITY TYPE AND SIZE

1.3.1 Facility Type

The new facility is to provide operations space for the 37th B1-B Squadron, including training (DOT), evaluation (DOV), weapons (DOK), flight (DOF), scheduling (DOS) and life safety (DOL), command space and maintenance space. The building will also store much of the equipment, tools and some of the vehicles normally used by the squadron.

1.3.2 Facility Size

The new building is programmed as shown on the drawings. Site development is to provide a minimum 80 foot setback from all vehicle access around the facility, and parking for at least 405 POV's (9 of which are to be handicapped accessible.)

1.4 PERSONNEL AND EQUIPMENT

The new facility is to provide operations space for the 37th B1 Bomber Squadron, including training (DOT), evaluation (DOV), weapons (DOK), flight (DOF), scheduling (DOS) and life safety (DOL), command space and maintenance space. The building will also store much of the equipment, tools and some of the vehicles normally used by the squadron.

1.5 DRAWINGS

Drawings of the site area and floor plans, elevations, sections and details are included for use in developing this design.

1.6 OPERATION, MAINTENANCE AND TRAINING REQUIREMENTS

1.6.1 Operation and Maintenance Manuals

The intent of the O&M Manuals are to promote and maximize the efficiency, economy, safety, and effectiveness of the life cycle operation, maintenance, and repair of the facility. Operation and maintenance manuals as required by the Technical Specifications (Divisions 1 thru 16) shall be provided.

1.6.2 Training

The Contractor shall provide operational and maintenance training for all systems furnished under this contract. The training will be for the operating and maintenance personnel. The training shall be put on by the system manufacturer. The training shall not take place until the operation and maintenance manuals are submitted and approved. The Contractor shall video tape the training sessions on VHS tapes and provide tapes to the Government.

1.7 OVERVIEW OF DESIGN-BUILD PROCESS

1.7.1 Overview

Since the early 1980s Congress has urged the military services to explore alternative construction methods, such as "Design-Build," which includes both design and construction under a single contract. This process is similar to "one-step turnkey selection procedures" and is defined in Title 10 of the United States Codes, Section 2862.

1.7.2 Process

The design-build process uses a Request for Proposal (RFP) to solicit for design and construction of a facility by a single contractual entity, such as a design-build firm, or joint venture between architect-engineer (A-E) and construction firm, or a construction management (CM) firm joint venture with an A-E and a construction firm. A design-build RFP states the project functional requirements, design and engineering criteria, technical performance specifications, and proposal evaluation factors. Potential contractors develop their proposals for the government to evaluate competitively, with the contract award based on a combination of technical merit and price.

In general, the RFP is a conceptual design document and the design-build Contractor is responsible for completing the design and constructing the project. The RFP has developed the site plan and building design and given

the facility an architectural character. These designs, with minor deviations allowed for detailing and constructibility, must be carried through to construction. The design-build contractor is responsible for all other designs on the project, such as the HVAC system, as long as they fit within the established criteria, and can be built on time and within budget.

After award of the contract, the design-build contractor will prepare a series of design submittals for review by the Government, so that design and criteria compliance can be effectively monitored for compliance. After compliance review of the final design, construction can begin. On-site construction activities shall not begin until all final corrected plans, specifications and design analysis for the entire project have been determined by the Government to be in compliance with the requirements stated in the RFP.

1.8 DESIGN-BUILD CONTRACTOR REQUIRED A/E SERVICES

The following is a condensed summary of Section 01332, "DESIGN AND CONSTRUCTION DELIVERABLES/PROCEDURES" contained elsewhere in this document. Refer to this Section for the full requirements.

1.8.1 Dimensions

English dimensions are allowed per Engineering and Construction Bulletin Number 2002-6, dated 1 April 2002. All measurements in the technical specifications sections relating to interior work shall be in English units of measurements. All design, products, and construction for exterior work on this project shall be accomplished using English units. All measurements in the technical specifications relating to exterior work shall be in English units.

1.8.2 Professional Registration

The award of contract will be made to one qualified contractual entity who will be responsible for design completion and the entire construction process for the facility. This contractual entity shall employ qualified building design professionals with appropriate state registration.

1.8.3 Request For Proposal - Binding Information

The information contained in this Request for Proposal (RFP) shall be considered binding unless specifically waived by the Contracting Officer. The successful offeror's proposal, along with any clarifications and/or final proposal revisions are a binding part of this contract. Site design, building design, architectural character and engineering/performance criteria shall be implemented through construction by the design-build contractor.

1.8.4 Evaluation of Systems

As part of the basic services, the design-build contractor shall evaluate building systems and components for their possible inclusion into the design. If these systems and components meet the specified design and performance criteria in the RFP, they may then be incorporated into the work.

1.8.5 Document Requirements

See Section 01332 Design and Construction Deliverables/Procedures for a

more detailed listing of requirements.

1.8.5.1 Design documents at all stages of design include:

Construction drawings.

Specifications.

Design analysis narrative with calculations for all disciplines.

A compact disk of electronic media as required by the design submittal stage.

1.8.5.2 Drawing Requirements

All design drawings shall be accomplished using English dimensions for interior floor plans, interior details, and site work. Prepare full-size drawings and half-size drawings in accordance with the Omaha District CADD Standards Manual dated July 2002. Design/Build Contractor shall use the approved modified English title block provided.

The design-build contractor shall submit the design at various stages of completion, plus the final documents, for review and comment. These stages are:

60 percent design submittal.

100 percent design submittal.

100 percent corrected final design.

1.8.5.3 60 Percent Design Requirements

Drawings, specifications, design analysis and calculations for all disciplines at an approximate 60 percent level of completion.

NOTE: Drawings, specifications, calculations and all other information necessary for building foundations, site work and civil work shall be final at the 60% Submittal. The 100% Submittal shall be updated as required.

Color boards for Structural Interior Design (SID). NOTE: SID package shall be final at the 60% submittal. The 100% submittal shall be updated as required.

See Section 01336, 60 PERCENT DESIGN REQUIREMENTS for additional requirements.

1.8.5.4 100 Percent Design Requirements

Incorporate all comments from the 60 percent review.

Drawings, specifications, design analysis and calculations for all disciplines at 100 percent level of completion. All aspects of the design and construction documents are complete.

Updated Color boards; SID.

1.8.5.5 100 Percent Corrected Final Design

Incorporate comments from the 100 percent design submittal.

Compact disk of electronic media.

The LEEDS Green Building Rating System Version 2.1, Project Checklist, available from the U.S. Green Building Council, shall be completed by the contractor and submitted to the government for information only. The buildings in this project will not require LEEDS certification.

See Section 01338, 100 PERCENT DESIGN REQUIREMENTS for additional requirements.

1.9 COMMON DEFICIENCIES

Following are some common costly deficiencies to be avoided in the preparation of contract documents. Carefully compare the architectural design and contract documents with these requirements at several points in the design process to avoid unnecessary changes later.

Not using correct abbreviations or terminology on the drawings. Abbreviations must match what is used on the standard abbreviation sheet and terminology must match what is used in the standard guide specifications.

Not using the correct scales, north arrow designation, section cut system, or incomplete dimensioning on the drawings.

Not providing sufficient space for door operation hardware at doors which swing into a wall running perpendicular to the opening. 6 inches minimum is required between edge of door frame and perpendicular walls.

Not providing correct and complete Design Analysis information written in the present tense. The Design Analysis will be written following the format indicated in Section 01332 of the Request For Proposal. A separate Fire Protection section in the Design Analysis with input from all disciplines is one area which is often overlooked and shall be included.

Not providing a structural stoop at exterior doors where the slab is at the same approximate elevation as the interior floor. The use of simple slabs on exterior grade leads to lifting of the slab in below-freezing temperatures which interferes with the safe operation of the door.

Not correctly presenting or coordinating (to avoid interference) features of Fire Protection, Noise Control, and Physical Security.

Not correctly referencing and cross referencing building sections, wall sections, details, etc.

Failure to read/use Technical Notes in Guide Specifications.

Failure to coordinate all disciplines prior to submittal of projects for review.

Sealant details not identified by appropriate symbols that relate to full scale illustrations.

Improper use of fire-retardant wood. Fire-retardant wood is combustible;

its use in buildings that are of noncombustible construction is extremely limited (see IBC for the minor allowable uses). Because of the potential for severe degradation, fire retardant plywood shall not be used in a roof or roofing system, or in structural applications.

Incorrectly listing trade names in door hardware specifications in lieu of ANSI numbers and failure to correctly specify hardware finishes.

Control joint in CMU walls are not shown on both architectural and structural plans, or are inconsistent.

Failure to delete all publications from Guide Specifications which do not apply to the particular project.

North is not oriented the same direction on all sheets (civil, site, architectural).

Failure to properly edit and tailor Guide Specifications.

1.10 SEQUENCE OF DESIGN-CONSTRUCTION

The schedule for design-construction shall meet the requirements as set forth in the provisions of the contract. See Section 00800 SPECIAL CONTRACT REQUIREMENTS for additional requirements.

PART 2 NOT USED

PART 3 NOT USED

-- End of Section --

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PART 3 NOT USED

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SECTION 01002

SITE WORK

PART 1 GENERAL

1.1 REQUIRED DESIGN CRITERIA

The design publications listed below shall be used as sources of criteria for the site design. The most current edition of the code or standard shall be used as criteria for the design. The criteria from these sources may be supplemented, but not supplanted, by applicable criteria contained in nationally recognized codes and standards.

Some of these publications may be available to download in Acrobat PDF or MS Word file format at the following internet addresses:

<http://www.afcesa.af.mil/publications/ETLs/default/html>

<http://www.access.gpo.gov>

<http://www.access-board.gov>

<http://store.mil-standards.com>

<http://www.hnd.usace.army.mil/techinfo/index.asp>

<http://www.afcesa.af.mil/default.htm>

<http://www.e-publishing.af.mil>

<http://www.ccb.org/ufigs/ufigstoc.htm>

<http://www.dtic.mil>

	PLUMBING-HEATING-COOLING CONTRACTORS ASSOCIATION (PHCC)
NSPC	(2000) National Standard Plumbing Code
	http://www.phccweb.org/technical/code.cfm

	INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS
	(IAPMO)
UPC	(2002) Uniform Plumbing Code
	http://www.iapmo.org/iapmo/

	AMERICAN WATER WORKS ASSOCIATION
AWWA-C651-99	(1999)Disinfecting Water Mains

	AIR FORCE CIVIL ENGINEER SUPPORT AGENCY (AFCESA)
UFGS	Unified Facilities Guide Specifications
	http://www.ccb.org/ufigs/ufigs.htm

DEPARTMENT OF DEFENSE

UFC 4-010-01	(31 July 2002) DoD Minimum Antiterrorism Standards for Buildings
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AIR COMBAT COMMAND (ACC)

ACC (June 2001) Architectural and Interior
Design Standards (Attachment 3)

ELLSWORTH AIR FORCE BASE (EAFB)

EAFB-DCS (1998) Design Compatability Standards
(Attachment 4)

EAFB-SD (March 2001) Standards for Design
(Attachment 5)

ENGINEERING MANUALS (EM)

EM 385-1-1 (03 Sept 96) Safety and Health
Requirements Manual, ENG Form 5044-R

EM 1110-1-1002 (14 Sept 90) Survey Markers and
Documentation

DEPARTMENT OF THE ARMY ENGINEERING INSTRUCTIONS (TI)

TI 814-01 Water Supply

TI 814-10 (03 Aug 98) Wastewater Collection

DEPARTMENT OF THE ARMY TECHNICAL MANUALS (TM)

TM 5-803-14 (14 Oct 94) Site Planning and Design

TM 5-820-4 (14 Oct 83) Drainage for Areas Other Than
Airfields

TM 5-822-5 (12 June 1992) Pavement Design for Roads,
Streets Walks, and Open Storage Areas

AMERICAN SOCIETY OF TESTING AND MATERIALS (ASTM)

ASTM D 977-98 (1998) Emulsified Asphalt

ASTM D 2027-97 (1997) Cutback Asphalt (Medium-Curing Type)

ASTM D 2397-02 (2002) Cationic Emulsified Asphalt

SOUTH DAKOTA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

SD ENR Design Criteria for Public Water Systems

SD ENR Design Criteria for Wastewater Collection
and Treatment Facilities

SD ENR Stormwater Discharge Permit - Surface
Water Quality Program

FEDERAL STANDARDS (FED STD)

FED STD 795 (April 1999) Uniform Federal Accessibility
Standards

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA)

NOAA ATLAS 2 (1973) Precipitation-Frequency Atlas of
the Western United States

AMERICAN ASSOCIATION OF STATE HIGHWAY & TRANSPORTATION OFFICIALS
(AASHTO)

AASHTO HB-17 (2002) Standard Specification for Highway
Bridges

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA-24 (2002) Standard for the Installation of
Private Fire Service Mains and Their
Appurtenances
<http://www.nfpa.org/Codes/>

UNIFIED FACILITIES CRITERIA

UFC 3-600-01 (17 April 2003) Fire Protection for
Facilities Engineering, Design, and
Construction

STATE OF SOUTH DAKOTA PUBLICATIONS

SDP-SS-RB (1998 Issue) Standard Specifications for
Roads and Bridges - with Sept 2002
Supplemental Specifications

SDP-DOT-SDP (1998 Issue) SD-DOT Standard Drawing Plates

MISCELLANEOUS PUBLICATIONS

ADA Checklist ADA Architectural Design Checklist
(Attachment 2)

1.2 OMAHA DISTRICT CORPS OF ENGINEERS STANDARD DETAILS AND CADD CELLS

The Omaha District Civil and Environmental standard details and CADD cells are available on the Omaha District FTP site. See Section 01332 for FTP address. These standards and cells are available for the Contractor's use. References to using exact details and drawings are found in this section. In those cases, the Contractor shall use the referenced standard drawings and/or details.

1.3 ENGINEERING SURVEY

The engineering survey to be used in the development of the design submittal is available to the Contractor on CD-RoM furnished with this solicitation. The survey information is in an AutoCAD 2000 drawing file, EL51V-TPMOD.dwg. The survey data information was gathered by a topographical survey performed in January of 2003. Contours were calculated and plotted at 1-foot intervals.

1.3.1 Setting of Surveying Monuments

The Contractor shall set one permanent surveying monument on the project

site in accordance with this paragraph. The monument shall be established to second order horizontal and vertical control. The Contracting Officer's Representative (COR) shall perform a compliance review on the actual monument location prior to establishment. The monument shall be constructed as a Type G monument, in accordance with EM 1110-1-1002. Field notes, as well as final monument horizontal and vertical coordinates, shall be provided to the COR.

1.3.2 Existing Utilities

The project site contains a variety of overhead and underground utilities. A water line exists along the north side of Bergstrom Drive and a sanitary sewer main is located along the south side of Bergstrom Drive. Fuel lines, telephone, gas and underground electrical lines exist through the project site. The base Civil Engineering Department is the primary contact for all utilities within the project site. The EAFB contact is Alan Temple, 28 CES/CEC (605-385-2529).

1.3.3 Geotechnical Data

The Geotechnical Engineering Report (Attachment 15) and the Geotechnical Engineering Letter (Attachment 16) are provided with this solicitation, and contain the following data:

- a. Recommended foundation design criteria
- b. Recommended pavement design criteria and sections
- c. Recommended site excavation and fill design and construction criteria

The Geotechnical Engineering Report (Attachment 15) and Geotechnical Engineering Letter (Attachment 16) will be used as the basis for the preparation of the final design. Any additional information required by the Contractor shall be procured and paid for by the Contractor.

1.3.4 Technical Specifications

Provide new site work and utility systems, complete and ready for operation. The design and installation of all site improvements, including materials and manufacturer's products, shall meet the instructions and requirements contained herein. Where conflicts between these instructions and the guide specifications or criteria exist, these instructions shall take precedence. Any installation requirements within these instructions, but not contained in the specifications, shall be added to the specifications or shown on the drawings. For minimum specification requirements see paragraph TECHNICAL SPECIFICATIONS.

1.4 STAGING AND CONTRACTORS ACCESS

1.4.1 Staging Area

No materials shall be stored outside the designated site boundaries. Security of the construction materials storage area shall be the responsibility of the Contractor. The location of the Contractor's staging and storage area shall be coordinated with the Contracting Officer. Prior to establishment of the staging area, the Contractor shall submit, for Government compliance review, a proposed site plan, showing Contractor trailers, staging area and temporary utility layouts. Staging area shall be reseeded with an accepted native grass mix accepted by the Base upon

completion of construction.

1.4.2 Contractors Access Route

Contractor access route to the project location shall be as shown on the drawings. Contractors parking areas shall be located near the staging area. Signage in accordance with the Manual on Uniform Traffic Control Devices shall be installed along the access route to warn drivers of the construction traffic. The route shall be returned to its original condition upon completion of construction.

1.4.3 Project Sign

See Attachment 25 for project sign requirements.

1.5 DEMOLITION AND REMOVAL

Several existing buildings are to be demolished as shown on the drawings. Equipment located within the existing structures is to be removed and relocated by Base personnel prior to demolition of the buildings, except for a storage tank at Building 7238 (see below). All existing building foundations shall be demolished as part of this project. The use of explosive materials during the demolition process will not be allowed. Material disposal shall be off-base. Areas disturbed by utility removals and new construction shall be repaved or reseeded to match their original surface. The Contractor shall remove all pavements, sidewalks, utilities, drainage structures and other appurtenances necessary to construct the new facility as presented on the attached drawings. Unless otherwise specified, disposal of all removed materials shall be outside the limits of Government controlled lands in accordance with Federal, State, and local regulations. The Contractor shall notify the Contracting Officer and the Ellsworth Environmental Management Flight if any material to be disposed of is found to contain hazardous, toxic, biological or radiological substances. Contaminated soils are not anticipated, but should they be encountered, the Contracting Officer shall be notified immediately. See additional information in Paragraph 1.8.2 of this Section. Rubbish and debris shall be removed from Government property daily to avoid accumulation at the project site. Demolition shall conform to UFGS Section 02220, DEMOLITION.

An existing storage tank will be removed at Building 7238, and will be relocated by the Contractor to Dock 51 (Bldg. 7610), as noted on the drawings. Prior to removal of the storage tank from its current location, the Government will empty the tank. The Contractor will disconnect all piping, etc. from the tank. The Contracting Officer will perform an inspection of the tank prior to removal, in the presence of the Contractor. The Government will provide a new foundation/support assembly for the tank. The Contractor shall install the relocated tank on the new foundation/support assembly in the same condition as it was prior to its removal from its original position. The Contracting Officer will perform an inspection of the tank after its reinstallation, in the presence of the Contractor. Connection of piping, etc. to the new tank location will be performed by Others (N.I.C).

Existing wood air crew lockers shall be removed from the existing Life Support Facility (Bldg. 1011) at EAFB by the Contractor and reinstalled in Room 113 of the new facility by the Contractor as shown on the Floor Plan. The existing lockers are approximately 4'-0" W. x 2'-0" D. x 7'-0" H.; quantity is 48. See Paragraph 1.6.1.3 in Section 01003 for list of other

equipment items to be relocated from existing buildings to the new facility by the Contractor.

The removal of Buildings B7221, B7226, B7238 and B7503 are included in the Base Bid of this project. Remediation of environmental hazards (asbestos, PCB's and flourescent light tubes) shall also be included in the Base Bid of this project, and must be completed prior to demolition of these buildings; see the Hazardous Materials Survey Report (Attachment 13) for description of such items.

The User will salvage certain items from Building 7503 after Air Force personnel are no longer using the facility but prior to it being turned over to the Contractor for demolition, as follows:

- One (1) 40 ton main A/C unit
- One (1) 15 ton rooftop A/C unit
- Three (3) 10 ton rooftop A/C units
- One (1) boiler room air compressor
- One (1) boiler room water softener

Testing has not been performed on painted surfaces in the project area for lead content. Lead can be present in older painted finishes.

The Omaha District Corps of Engineers will be responsible for surveying and reporting of all environmentally hazardous materials associated with the buildings to be demolished in this project, including lead-based paint.

1.6 NEW CONSTRUCTION

All new construction is located entirely within the limits of Government-controlled lands. In accordance with UFC 4-010-01 DoD Minimum Antiterrorism Standards for Buildings, the 37th B1-B Squadron Operations Facility is classified to be a Primary Gathering Building, and shall have an 80 foot set back (standoff) between the building and all roads and parking lots. The set back distance to the dumpster enclosure shall be 80 feet. The layout and design of site elements shall be governed by the requirements of the EAFB-DCS Ellsworth AFB Design Compatability Standards (Attachment 4) as applicable for areas outside the Restricted Area.

1.6.1 Building

Location and construction of the new 37th B1-B Squadron Operations Facility, including associated structures, roads, parking, utilities and landscaping shall be as indicated on the drawings and as specified herein. The new building shall be handicap accessible from the parking lot to the main entrance. Minor changes may be accepted by the Government if it is beneficial to the overall design of the project.

1.6.2 Main Entrance

Entrance walks shall be provided as indicated on the drawings.

1.6.3 Exterior Furnishings

Trash receptacles/ash urns shall be provided; one of each at the main entrance and one of each at the rear service entrance. The exact locations shall be coordinated with the Government and the Ellsworth AFB Design Compatability Standards (Attachment 4) and shown on the Contractor's Landscape Plan. Furniture shall be specified in UFGS Section 02870A, SITE FURNISHINGS.

1.6.4 Walks

Exterior concrete walks shall be placed at locations indicated on the Site Plan. Walks shall be 4 inch thick concrete with a light broom finish. Adjustments to the walk layout may be made to complement the final Site Plan. Walks shall have a joint pattern as indicated on the drawings, with expansion joints at 100 foot intervals. Curb ramps shall be provided for handicapped accessibility at roadway/driveway intersections and in compliance with (April 1999) Uniform Federal Accessibility Standards.

Lighted bollards shall be installed along the sides of walks to provide lighting for the walks. The bollards shall be, or match, Bega 8482S (32" high aluminum bollard, round with domed top, louvered shielded light source, stainless steel socket head screws, clear prism glass with screw neck with E17, LU35/D/MED lamps).

1.6.5 Parking Areas

Contractor shall be responsible for striping parking stalls, handicap (van-accessible) stalls, and handicapped access aisles. Provide a "Van Accessible" sign with the international symbol of accessibility. Sign shall be white letters on Standard Blue background. Striping and signage shall be in accordance with FED STD 795 (April 1999) Uniform Federal Accessibility Standards. The new parking stalls and the handicap stalls shall be striped with 4 inches wide white painted stripes. Provide concrete curb and gutter at locations shown on the attached RFP Site Plan drawings. Requirements for parking are shown on the drawings.

1.6.6 Access Drive and Roads

Provide four new access drives from Bergstrom Drive to the new public parking lot serving the new building.

Provide a new roadway alignment for Bergstrom Drive as shown on the site plan.

1.6.7 Fencing

Provide security fencing as indicated on the drawings. Provide new wire fencing and posts to match existing fence type, materials, post spacing, and height.

1.6.8 Emergency Vehicle Maneuvering

The final site design shall support the path and maneuvering space required by emergency vehicles to serve the facilities as shown on the plans.

1.6.9 Screen Walls/Dumpster Enclosure

Construct screen walls to block the view of exterior mechanical equipment from vehicular and pedestrian traffic. Also, construct a concrete dumpster pad with a four-sided screen wall enclosure. Screen walls shall be finished in the same materials as the building's exterior walls. The aesthetics of the new facility, and easy access to the dumpster by the servicing truck, shall be the major considerations of the chosen location for the dumpster enclosure. Location of the enclosure shall be subject to Government concurrence. The enclosure shall be located off the parking lot, and not in clear view of the main entrance. An 80 foot minimum

separation is required between the building and the dumpster enclosure. Exterior electrical transformers and switch pads shall be screened within the building mechanical/electrical equipment enclosure.

1.6.10 Not Used

1.6.11 Landscaping

Landscape plan shall be designed to visually enhance the new facility with color, form and screening, while providing shade and windbreak for the new building. Trees and shrubs shown on the Site Plan are indicative of areas to be landscaped and the type and quantity. Plantings shall be chosen from Appendix 1 (plant list) of the Ellsworth AFB Design Compatibility Standards (Attachment 4). Landscaping shall be specified using UFGS Section 02930A, EXTERIOR PLANTING and UFGS Section 02935A, EXTERIOR PLANT MATERIAL MAINTENANCE. The Contractor shall be responsible for editing these specifications.

All tree, shrub, and seed material shall be native, drought tolerant species. All tree and shrub vegetation presently on or adjacent to the site shall be protected from damage by heavy equipment, unless otherwise approved by the Ellsworth Environmental Management Flight.

Landscaping shall consist of low maintenance balled and burlapped trees and container-grown shrubs. Plant materials shall be climatized to the local area for a period of one growing season prior to planting.

For gravel mulch areas, use 1-1/2 inch river rock; place minimum 4 inch deep over landscape fabric throughout mulch areas as indicated on the drawings.

1.6.12 Turf

Three types of turf will be used on this project. See Site Plans for locations of these types.

- Sod (irrigated)
- Seed (irrigated)
- Dryland seed (non-irrigated)

Seeding of all construction-disturbed areas is required. Existing sodded areas disrupted by tility activities shall be restored to their original condition within two (2) days after any disruption or damage caused by construction activities. All newly turfed areas shall be fertilized with no less than 4.5 lbs. per 1,000 sf of 18-46-0 fertilizer. All seeded areas shall be drill-seeded with a Brillon-type seeder, followed by hydromulching. Hydromulching shall apply a minimum of 45 lbs. per 1,000 sf of green-tinted, wood-fiber hydromulch. Seeding and sodding shall be as specified in UFGS Sections 02921A SEEDING and 02922A SODDING.

Weed seed shall not exceed 1 percent by weight of the total mixture. Wet, moldy, or otherwise damaged seed shall be rejected. Seed mixing shall be performed by the seed supplier prior to delivery to the site. Bulk quantities of seed shall be labeled.

1.6.12.1 Soil Preparation

Rip existing soil to a minimum depth of six (6) inches in one direction using an agricultural ripper with tines spaced at no greater than eighteen (18) inches. Areas adjacent to walks, structures, and curbs, etc., where

the use of large mechanical equipment is difficult shall be worked with smaller equipment or by hand.

Remove all rubble, stones and extraneous material over one and one half (1 1/2) inches in diameter from the site.

Spread the following amendment over the entire area to be landscaped and incorporate into the top four (4) inches of soil by dicing or rotating until a uniform mixture is obtained with no pockets of soil or amendments remaining.

Sufficient fertilizer formulated to apply:

100 lbs./acre total nitrogen
70 lbs./acre actual phosphate
50 lbs./acre actual potassium

Note: Contractor shall conduct a soil analysis to verify that the above specified fertilizer quantities are sufficient to meet the recommendations described in the test results. If a significant discrepancy exists between test results and specified fertilizer quantities, contact Contracting Officer's Representative. Submit test results.

Fine grade by using a float drag to remove irregularities in the surface resulting from tillage fertilizing or other operations. Areas adjacent to walks, structures, and curbs, etc., where the use of large mechanical equipment is difficult shall be worked with small equipment or by hand. Final grade at curbs shall be one to two inches below the top of curb and adjacent paving elevations. Do not plant until the Contracting Officer's Representative approves the final grade. Remove any additional stones over one and one half (1 1/2) inches that have come to the surface.

1.6.12.2 Not Used

1.6.12.3 Dryland Seed Mix

Use the following for all disturbed areas and those designated to receive Dryland Seed Mix.

Western Wheat Grass	8 lbs. PLS/Acre
Vaughn Side Oats Gramma	8 lbs. PLS/Acre
Blue Gramma	8 lbs. PLS/Acre
Kentucky Blue Grass	8 lbs. PLS/Acre
Creeping Red Fescue	8 lbs. PLS/Acre
Scaldis Hard Fescue	8 lbs. PLS/Acre
TOTAL	48 lbs. PLS/Acre

Seed mix shown shall be mechanically drill seeded at a rate of 25 lbs. per acre for all designated areas.

1.6.12.4 Seeding (Irrigated)

Western Wheat Grass	8 lbs. PLS/Acre
Vaughn Side Oats Gramma	8 lbs. PLS/Acre
Blue Gramma	8 lbs. PLS/Acre
Kentucky Blue Grass	8 lbs. PLS/Acre
Creeping Red Fescue	8 lbs. PLS/Acre
Scaldis Hard Fescue	8 lbs. PLS/Acre

TOTAL

48 lbs. PLS/Acre

Seed mix shown shall be mechanically drill seeded at a rate of 25 lbs. per acre for all designated areas.

1.6.12.5 Sod (Irrigated)

Sod shall be state-certified as classified by applicable state laws. Sod shall be locally grown and be comprised of a mixture of improved varieties of Kentucky Bluegrass. It shall be free of thatch, diseases, nematodes, soil-borne insects, weeds or undesirable plants, stones larger than 2-inches in any dimension, woody plant roots and other material detrimental to a healthy stand of turf. Dry, moldy, yellow, irregularly shaped, torn or uneven end sod pieces shall be rejected. Sod shall be machine cut to a uniform thickness of 1 1/4-inch within a tolerance of 1/4-inch, excluding top growth and thatch. Sod anchors shall be used as recommended by the sod supplier.

1.6.12.6 Hay Mulch

Hay mulch shall consist of clean field hay and shall not contain seeds of noxious weeds. Hay in such an advanced state of decomposition as to smother or retard the growth of grass will not be accepted. Hay that breaks in the crimping process rather than bending will not be accepted. The hay mulch shall have a minimum of 60% of the hay stubble 10" or longer upon completion of the crimping operation.

1.6.12.7 Mulch Tackifier

Material for mulch tackifier shall be applied to all hay mulched areas and shall consist of a free-flowing non-corrosive powder produced from the natural plant gum of *Plantago Insularis* (Desert Indianwheat). The powder shall possess the following properties:

Protein Content	1.6 %
Ash Content	2.7 %
Fiber Content	4.0 %
pH (1% solution)	6.8 %
Settleable Soils	5.0 %

Applied at a rate of 100 lbs./acre.

1.6.12.8 Erosion Control Blanket

PPS Packaging Company Xcel Superior erosion control blanket, or equal passing government compliance review. Erosion control blanket to be installed on areas of 3:1 slope or greater.

1.6.12.9 Seeding Installation

Seeding Season: Seeding shall occur after spring thaw and before consistent ground freeze. "Spring thaw" shall be defined as the earliest date in a calendar year in which seed can be buried 1/2 inch into the surface soil (topsoil) through normal drill seeding methods. "Consistent ground freeze" shall be defined as that time during the fall months in which the surface soil (topsoil), due to freeze conditions, prevents burying the seed 1/2 inch through normal drill seeding operations. At no time shall seed be sown, drilled, or otherwise planted when the surface soil or topsoil is in a frozen or crusted state.

All slopes 3:1 and flatter shall be seeded by mechanical power drawn drills followed by packer wheels or drag chains. Mechanical power drawn drills shall have depth bands set to maintain a planting depth of at least one-quarter inch and shall be set to space the rows not more than five inches apart. Seed that is extremely small shall be sowed from a separate hopper adjusted to the proper rate of application.

When requested by the Contractor and approved by the Contracting Officer's Representative, seeding may be accomplished on small areas not accessible to machine methods, by means of approved broadcast or hydraulic type seeders.

Seed shall not be drilled or sown during windy weather or when the ground is frozen or otherwise untillable.

All seed sown by broadcast-type seeders shall be "raked in" or otherwise covered with soil to a depth of at least one-quarter inch. Hand method of broadcasting seed will be permitted only on small areas not accessible to machine methods. Water shall be applied when ordered. Seeding rates shall be amended to reflect different seeding methods.

If inspections indicate that strips wider than the specified space between the rows planted have been left or other areas skipped, the Contract Officer's Representative may require immediate re-sowing of seed in such areas at the Contractor's expense.

Seeded areas damaged due to circumstances beyond the Contractor's control shall be repaired and re-seeded as ordered. Payment for this corrective work, when ordered, shall be at the contract prices.

Seeding of portions of the areas designated may be permitted before the construction is completed in order to take advantage of growing conditions.

1.6.12.10 Turf Maintenance and Repair

The maintenance period shall begin immediately after each area is seeded and continue until final acceptance of entire project. During this time, be responsible for watering, mowing, spraying, weeding, and all related work as necessary to ensure that turf areas are in a vigorous growing condition. Provide all supervision, labor, material and equipment to maintain seeded areas.

Water turf areas at regular schedule to be accepted by Contracting Officer's Representative until stand of grass is established. After turf is established, dryland grasses should not require supplemental watering. Water shall be free of substances harmful to plant growth. Be responsible for furnishing water from underground sprinkler system, quick couplers, or other source.

Areas in which there is not a satisfactory stand at the expiration of the one-year guarantee period shall be re-seeded or re-sodded as necessary until final acceptance. A satisfactory stand for seeded areas shall be defined as a minimum of 6 grass seedlings per square foot.

Mow turf areas when the grass reaches 6" in height, cutting back to 4". Remove grass clippings from adjacent pavement or irrigated turf areas.

Fertilize as specified under Soil Preparation.

Provide weed control, as required using selective herbicides approved by Contracting Officer.

Provide insect and disease control, as required, using insecticide and fungicide passing compliance review by Contracting Officer.

Contractor shall repair voids and disturbances in turf areas caused by construction activities. Procedures outlined above for establishing revegetated turf areas shall be followed using the appropriate products to match existing in the area.

1.6.13 Irrigation System

Lawn irrigation system and tree drip irrigation system shall be provided for all landscape items installed, except for dryland seeded areas. The irrigation systems shall be as specified in UFGS Section 02811A UNDERGROUND SPRINKLER SYSTEMS, shall be served from base water mains and shall not tap into the new building combined fire and domestic water line service line.

a. All sodded and seeded areas shall be lawn irrigated, except for dryland seeded areas.

b. The irrigation system shall consist of standard, commercially available components. The components shall be products of manufacturers regularly engaged in the manufacture of such items and shall essentially duplicate those that have been in satisfactory operation at Ellsworth AFB for at least two years. Current system components are primarily manufactured by Toro or Rainbird.

c. The sprinkler system shall be completely underground, automatically operated by a central sprinkler controller located within the building, and capable of providing the required amount of water to the lawns and newly planted trees as required in this contract. The lawn sprinkler pop-up heads shall be designed to be adjustable for coverage and flow. Water to irrigate the trees shall be supplied by a drip or trickle irrigation system. Irrigation system shall operate through a backflow prevention device with inline pressure regulating devices, filters, control valves, vacuum relief valves, flush valves, and pressure compensating drip heads. Supply all necessary tools and equipment for a complete installation.

d. Head spacing shall provide head to head coverage due to local wind conditions and shall not be less than the manufacturer's recommendations for the type and sizes of trees and shrubs installed and the area of turf to be sprinkled. The Contractor shall submit design calculations for review. The Contractor shall also provide design drawings that include typical head spacing, system layout, pipe size, layout, and pressures. All components shall be shown on the irrigation plans for review. Local water main system pressure availability shall be obtained from the EAFB CE Office. See Section 01008 Fire Protection Requirements, paragraph entitled "Basis for Design".

e. A reduced pressure principle backflow preventer shall be installed between the irrigation system and the potable water system. A strainer shall be installed upstream of the backflow preventer with a screening element compatible with the emitters or sprinkler heads used and as recommended by the manufacturer. Provide a self-draining, freeze-proof, shut-off valve upstream of the backflow preventer and strainer. Vacuum

breakers shall not be used in lieu of the reduced pressure principle backflow preventer. The system shall also be equipped with a quick coupler valve immediately outside the building for blowing water out of the system at the end of the season. The air connection shall be located downstream of the backflow preventer and strainer.

f. High points in the irrigation system shall be equipped with air vacuum relief valves.

1.7 PAVEMENTS

1.7.1 Pavement Sections

The Contractor shall be responsible for design of all pavements using the traffic information provided below. Design of pavement structures for streets and parking areas shall be determined by the Contractor using the methods described within TM 5-822-5. Asphalt pavement thickness shall be a minimum of 6 inches. Pavements for permanent installations shall be designed for a life of 25 years. Pavementsshall be designed for seasonal frost conditions. Soil data for the pavement design shall be obtained from the Geotechnical Engineering Report (See Attachment 15).

1.7.2 Design Traffic for Parking Areas, Access Roads and Bergstrom Drive

Pavement shall be flexible hot-mix asphalt and concrete (as shown on the Site Plans) with concrete curb and gutter. The pavement shall be designed for an Average Daily Traffic (ADT) of 1500 vehicles. The traffic composition consists of: 95 percent passenger cars, panel trucks and pickup trucks and 5 percent two-axle trucks. Portions of the pavement that will be used by garbage trucks and semi-trailer trucks, and shall be designed accordingly. The pavement shall also be designed to support seasonal traffic from snow plows.

1.7.3 Sidewalks

P.C. concrete sidewalks shall be a minimum of 4 inches thick. Joint patterns for walks are discussed in paragraph, "Concrete Sidewalks and Curbs and Gutters," below. Expansion joint spacing shall not exceed 100 feet. Service area walks shall be designed to accommodate 1/2 and 3/4 ton service pickups.

1.7.4 Pavement Specifications

Pavements shall be constructed in accordance with South Dakota Highway SDDOT Specifications. Unless otherwise specified, unit price clauses in SDDOT Specifications shall be deleted.

1.7.4.1 Bituminous Wearing Course

Bituminous wearing course shall conform to the requirements in Section 02561, South Dakota Pavements (Attachment 26). The maximum size aggregate used in bituminous concrete shall be approximately equal to, but always less than 1/2 the wearing course thickness and 2/3 the intermediate course thickness. The total thickness of bituminous concrete shall not be less than 2 inches. Where the total thickness of bituminous concrete requires more than one lift, an intermediate course may be specified beneath the wearing course.

1.7.4.2 Bituminous Prime Coat

A bituminous prime coat shall be used at the option of the Contractor. Bituminous prime coat will be used when it is anticipated that the constructed base course may be damaged by rain, wind, or traffic prior to placement of the bituminous concrete pavement. Bituminous prime coat shall conform to the requirements found in Section 02561, South Dakota Pavements (Attachment 26). Bituminous prime coat shall be: liquid asphalt conforming to the requirements of ASTM D 2027-97, designation MC-30 or MC-70, at the Contractor's option, except that only MC-30 shall be used on dense graded base courses if MC-70 does not adequately penetrate the base course material. In lieu of cut-back asphalt, the Contractor may use cationic emulsified asphalt conforming to the requirements of ASTM D 2397-02, designation CSS-1 or CSS-1h.

1.7.4.3 Bituminous Tack Coat

Contact surfaces of previously constructed pavement, curbs, manholes, and other structures shall be sprayed with a thin coat of bituminous material conforming to the requirements found in Section 02561, South Dakota Pavements (Attachment 26).

1.7.4.4 Aggregate Base Course

Aggregate base course shall conform to the requirements found in Section 02561, South Dakota Pavements (Attachment 26). The following requirements shall be incorporated into the aggregate material specifications:

"Disintegrated granite shall not be used for production of any aggregate and the processed aggregate shall contain not more than 2.0 percent by weight of disintegrated granite particles in that portion of the total sample larger than the 1/2" sieve and not more than 4.0 percent in any individual sieve size listed in the required aggregate gradation for that portion larger than the 1/2" sieve. A disintegrated granite particle is defined as a soft, crumbly particle of igneous rock having a visible crystalline grain size and consisting essentially of feldspar and quartz with lesser amounts of micas and/or amphiboles and pyroxenes. Generally, the rock particle will be stained by iron oxide and the feldspar grains will have a dull, highly fractured appearance. The individual mineral grains are so weakly bonded that the particle will crumble under moderate pressure. When tested by Test Method COE CRD-C 130 the particle would be classified as soft."

1.7.4.5 Subbase Course

Subbase course shall be placed beneath the crushed aggregate base course. Subbase shall serve as a separation and/or filter layer and shall conform to the requirements found in Section 02561, South Dakota Pavements (Attachment 26). Aggregates for 50 CBR subbase course shall consist of crushed quarry stone, crushed gravel (2 or more fractured faces) or a combination crushed gravel with fines.

1.7.4.6 Concrete Sidewalks and Curbs and Gutters

Concrete sidewalks and curbs and gutters shall be specified in Section 02561, South Dakota Pavements (Attachment 26). Expansion joints in P.C. concrete sidewalks shall be sealed with cold-applied sealant which is stone or grey in color.

1.7.4.7 Concrete Pavement

Concrete pavement shall be specified in CEGS Section 02561, South Dakota Pavements (Attachment 26).

1.8 GRADING

1.8.1 General

Positive drainage shall be provided for all areas and existing drainage ways shall be utilized to the extent possible. It is desirable to direct drainage away from buildings to curb and gutter and/or drainage structures. If surface drainage is used, shallow broad depressions are preferred. Storm drainage swales shall be avoided along roadways and between buildings and parking areas. Parking areas shall be graded such that storm water is directed off to the sides, with curbs and gutters to control drainage, and not down the center of the parking area. Earthwork shall be balanced to the extent possible without compromising the design. The number of existing trees to be removed shall be kept to a minimum. No grading shall be done within drip lines of existing trees to be preserved.

Grading shall be specified in UFGS Section 02300A EARTHWORK. The Contractor shall be responsible for editing the specification for the project.

1.8.2 Borrow and Waste

Borrow materials shall be obtained from sources inside the limits of Ellsworth AFB, as directed by the Contracting Officer. The Contractor shall surplus excavated material not required for fill and any waste material shall be disposed of by the Contractor at his own expense and responsibility inside the limits of Ellsworth AFB, as directed by the Contracting Officer, except for contaminated soils, which shall be disposed of by the Contractor at his own expense and responsibility at the Rapid City, South Dakota landfill.

1.8.3 Sidewalks

Concrete walks shall have a transverse grade of 2 percent. The desired maximum longitudinal walk grade is 4 percent with an absolute maximum of 8 percent. Handicapped accessible walks with a longitudinal slope greater than 5 percent shall be considered a ramp. See FED STD 795 Uniform Federal Accessibility Standards for ramp requirements. Special attention shall be given to sidewalks that are on the north (shaded) side of buildings. These walks should be designed to ensure a freeze/thaw cycle does not result in the formation of ice on the walk. Ice on walks should be a safety consideration for all areas. The use of single riser steps is especially discouraged. When steps are unavoidable, they should have at least three risers and will be provided with handrails. Double purpose walks are a combination of a straight curb and a concrete walk. Their use shall be limited to area where the drainage flows away from the curb line or gutter.

1.8.4 Transverse Parking Area Grades

- a. Desirable minimum of 2 percent.
- b. Absolute minimum of 1.5 percent for flexible pavement and 1 percent for rigid pavement.

1.8.5 Longitudinal Parking Area Grades

Maximum of 5 percent.

1.8.6 Ramp Grades

- a. Maximum of 8 percent

1.8.7 Gutter Grades

- a. Desirable minimum of 0.8 percent.
- b. Absolute minimum of 0.5 percent.

1.8.8 Building Floor Elevation

Building finished floor elevations shall be set to ensure that the minimum and maximum grades are met.

1.8.9 Grades Away From Building

- a. Minimum of 5 percent for 10 feet.
- b. Maximum of 10 percent for 10 feet.

1.8.10 Overlot Grades

- a. Minimum 1 percent for cohesionless sandy soils.
- b. Minimum 2 percent for cohesive soils or turfed areas.
- c. Sideslopes for ditches, roads, and other turfed areas shall be no steeper than 1V on 3H.

1.8.11 Ditch Slopes

Minimum grade of 1.0 percent for channelized flow.

1.9 ROAD GEOMETRIC DESIGN

Horizontal and vertical alignment shall be designed in accordance with AASHTO , "A Policy on Geometric Design of Highways and Streets".

1.10 STORM DRAINAGE

The new facility is to be located on the south side of the relocated Bergstrom Drive. This area generally slopes from northwest to southeast. The design shall incorporate inlets, storm sewer pipes, and culverts to convey additional runoff generated by the hard surfaces and roof areas. Erosion control measures such as sediment fence, rip rap, and erosion matting shall be incorporated into the design.

1.10.1 Determination of Storm Runoff

For areas of up to about 1 square mile, where only peak discharges are required for design and extensive ponding is not involved; the computation of runoff will be accomplished by either the Rational Method or the modified rational method presented in TM 5-820-4. For larger areas, when suitable unit-hydrograph data are available or where detailed consideration of ponding is required, computation should be by unit-hydrograph and

flow-routing procedures. Local drainage design requirements can be obtained from the County of Meade, South Dakota.

1.10.1.1 Design Storm Return Period

Storm drains and culverts shall be sized for a design storm with a return period of 10 years. Provisions shall be made to protect all buildings and critical structures from a major storm with a return period of 100 years.

1.10.1.2 Rainfall Depth-Duration-Frequency Data

Rainfall data for states in the western United States shall be obtained from NOAA ATLAS 2. Rainfall intensity-duration data developed by cities or regions may be used if available. Rainfall Intensity-Duration data for projects at Ellsworth AFB shall be obtained from the City of Rapid City, SD or from Meade County, South Dakota.

1.10.2 Storm Drainage Study and Design

The Contractor shall be responsible for a storm drainage study of the site. The study shall include drainage calculations as indicated in Section 01336 (60 Percent Design Requirements) and Section 01338 (100 Percent Design Requirements). The design and construction of the storm drainage system shall reflect the results of that study and shall be properly coordinated for on-site detention with the surrounding areas. The Contractor shall be responsible for diverting the existing drainage around the buildings and for providing positive drainage of the building site as well.

1.10.3 Storm Drainage System Layout

If surface drainage is used, shallow broad depressions are preferred. In the event that storm sewer is required, storm drainage system shall be specified in UFGS Section 02630A STORM-DRAINAGE SYSTEM. The Contractor shall use the Corps of Engineers standard details for storm drain manholes, area inlets and curb inlets. The standard details are available at the Corps FTP site. The storm drainage system shall be designed so as to minimize the number of drainage structures required. Structures shall be located at all changes in direction of storm drain line, at the intersection of two or more storm drain lines, and where required to intercept rainfall runoff. The distance between drainage structures will be not more than approximately 400 feet for conduits with a minimum dimension smaller than 36 inches. Storm runoff in streets and parking areas with curbing shall be collected using curb inlets or area inlets. The use of curb openings with drainage flumes to drain water from parking streets and parking areas with curbing will be permitted if approved by the Government. Drainage of runoff from turfed areas onto pavements shall be minimized. Where possible, a minimum drop of 2 inches between inverts of equal diameter storm drain pipes shall be provided at the centerline of drainage structures. Where storm drain pipes are of different diameters, the pipe crown elevations should be matched at the drainage structure. Storm drain systems shall be designed to provide a minimum flow velocity of 2 feet per second when the drains are one-third or more full. Storm drain pipes shall have a minimum of 12 inch diameter. Storm drain lines shall be located outside of paved areas to the extent possible. Under no circumstances shall storm drain lines be located beneath buildings.

1.10.3.1 Hydraulic Design

If required, new storm drain pipes shall be designed for gravity flow

during the 10-year design storm unless otherwise approved by the Government. The hydraulic grade line shall be calculated for the storm drain system and all energy losses accounted for. Storm drain systems shall be designed to provide a minimum flow velocity of 6 feet per second when the drains are one-third or more full.

1.10.3.2 Manholes

If required, diameter of manholes shall be large enough to accommodate pipes entering and exiting the manhole. Manhole cast iron frames shall have a minimum opening. Galvanized steel ladders shall be provided in all manholes with a depth exceeding 12 feet in accordance with UFGS Section 02630A STORM DRAINAGE SYSTEM. Diameter of manholes shall be large enough to accommodate pipes entering and exiting the manhole. Manhole cast iron frames shall have a minimum opening.

1.10.3.3 Area Inlets

If required, area inlets shall be properly sized and designed to accommodate the design flows.

1.10.3.4 Curb Inlets

Locating parking area curb inlets at building entrances shall be avoided if possible. Curb inlets along two-lane streets shall be spaced and sized so that the flow in the gutter and ponded areas at low points do not cover the crown of the street.

1.10.3.5 Headwalls and Flared End Sections

Headwalls or flared end sections shall be provided at the entrance and ends of culverts and at storm drain outfalls. Outlets and endwalls shall be protected from undermining, scour, lateral erosion and degradation of the downstream channel by use of appropriately designed/sized rip-rap.

1.10.3.6 Culverts

Culvert pipes shall have a minimum diameter of 18 inches wherever possible. Short culverts under sidewalks (not entrances or driveways) shall be greater than or equal to 4 inches.

1.10.4 Perimeter Drainage System

A perimeter drainage system shall be provided adjacent to the new facility to handle the roof drainage. The drainage system shall be a perforated pipe embedded in a 4-inch (min.) rock mulch bed extending 5 feet out from the exterior building line. The rock mulch bed shall be placed on an impervious 30 mil HDPE membrane. The perimeter drainage system shall be connected to the site storm sewer system with solid wall PVC piping.

1.10.5 Storm Drain and Culvert Pipe

The Contractor shall select the appropriate storm drain and culvert pipe materials from the options specified in UFGS Section 02630A STORM-DRAINAGE SYSTEM. Concrete or plastic (Polyethylene) pipe shall be used for all new construction of culverts and storm drains. Pipe, bedding, and backfill shall be of adequate strength (or stiffness) to support the earth, live, and construction loads imposed on the pipe. Only pipe materials which have a minimum, design service life of 50 years shall be allowed for permanents

installations. As a minimum, all pipe joints shall be soil tight. The Contractor shall specify watertight pipe joints when the water table is at or above the pipeline.

1.10.5.1 Concrete Pipe

Reinforced concrete pipe shall be a minimum Class III. Concrete pipe shall not be used where soil is more acidic than pH 5.5 or when the fluid carried has a pH less than 5.5 or higher than 9.0. Type I cement may be used only when sulfates in the soil are 0.1 percent or less and dissolved sulfates in the effluent are 150 ppm or less. Type II cement may be used only when sulfates in the soil are 0.2 percent or less and dissolved sulfates in the effluent are 1,500 ppm or less. Only Type V cement may be used if sulfates in the soil exceed 0.2 percent or dissolved sulfates in the effluent exceed 1,500 ppm. Concrete pipe shall be assumed to have a minimum design service life of 50 years unless the Contractor determines that conditions at the site will reduce the service life. Concrete culverts and storm drains shall be protected by a minimum of 3 feet of cover during construction to prevent damage before permitting heavy construction equipment to pass over them during construction.

1.10.5.2 Plastic Pipe (Polyethylene Corrugated pipe)

Stiffness of the plastic pipe and soil envelope shall be such that the predicted only-term deflection shall not exceed 7.5 percent. Plastic pipe shall be protected by a minimum of 12 inches of cover during construction to prevent damage before permitting heavy construction equipment to pass over them during construction. Split couplers shall not be allowed for corrugated height-density polyethylene pipe.

1.11 TRAFFIC SIGNAGE AND STRIPING

Traffic signage and striping shall be provided for all new roads and parking areas. The signage and striping shall closely match the layout of the roads and parking, and the intent as shown on the drawings. Signage and striping shall be designed in accordance with the Manual on Uniform Traffic Control Devices for Streets and Highways. Parking areas shall be striped with non-reflectorized paint. Roads and streets shall be striped with reflectorized paint. Pavement markings shall be specified in UFGS Section 02763A PAVEMENT MARKINGS. All new striping shall be lead free. All specification submittals shall be designated For Information Only. See Attachment 12 for traffic sign mounting requirements.

1.12 EROSION AND SEDIMENT CONTROL

The Contractor shall be responsible for selecting and implementing Best Management Practices (BMPs) to minimize pollutants in storm water discharges associated with construction activity at the construction site. All erosion and sediment measures and other protective measures shall be maintained by the Contractor in effective operating condition. All temporary structural practices shall be removed once the corresponding disturbed drainage area has been permanently stabilized. In the State of South Dakota, EPA has authority for the National Pollutant Discharge Elimination System (NPDES) on Federal Facilities. If construction activities results in the disturbance of 5 acres of land or more, coverage under the EPA Storm Water General Permit For Construction Activities (South Dakota Permit No. SDR10###) is required. The Contractor and the Omaha District Corps of Engineers shall be co-permittees. The Contractor shall

be responsible for complying with the requirements in Section 01355 ENVIRONMENTAL PROTECTION. The Contractor shall be responsible for applying the requirements of Section 01356 STORM WATER POLLUTION PREVENTION MEASURES.

1.12.1 Temporary Construction Entrance

Tracking of mud from the construction site onto adjacent roads and streets shall be kept to a minimum. A temporary stabilized stone pad shall be constructed at points where vehicular traffic will be leaving the construction site and moving directly onto a paved road or street. It shall extend the full width of the vehicular ingress and egress area and have a minimum length of 100 feet. The entrance shall be maintained in a condition which will prevent tracking or flow of mud onto adjacent roads or streets. If conditions on the site are such that the majority of the mud is not removed by the vehicles traveling over the stone, then the tires of the vehicles shall be washed before entering the road or street. Any mud which is tracked onto roads or streets shall be removed at least once daily.

1.12.2 Erosion Control Blanket

Bottoms and sideslopes of ditches and any other disturbed slopes 1V on 3H or steeper shall be covered with an erosion control blanket immediately after seeding.

1.12.3 Silt Fence

Silt fencing shall be installed below disturbed areas where erosion would occur in the form of sheet and rill erosion. The size of the drainage area above the silt fence shall not exceed one fourth of an acre per 100 feet of silt fence length. Silt fencing may be installed across ditches only when the maximum contributing drainage area is not greater than 1 acre. Silt fence constructed across a ditch shall have wire support and shall be of sufficient length to eliminate endflow.

1.12.4 Straw Bale Barriers - Prohibited

Straw bale barriers may not be installed across ditches.

1.12.5 Storm Drain Inlet Protection

Storm drain inlet protection shall be installed around any new or existing storm drain inlets that will become operational before permanent stabilization of the corresponding disturbed drainage area has occurred. Storm drain inlet protection shall include either a sediment filter or an excavated area around the storm drain inlet.

1.12.6 Rock Check Dam

Rock check dams may be installed in ditches which drain 20 acres to 100 acres. The allowable drainage area will be dependent on the gradation of the rock used to construct the check dam. The maximum height of the dam shall be 3 feet. The center of the dam shall be at least 6 inches lower than the outer edges. For added stability, the base of the check dam may be keyed into the soil approximately 12 inches. The maximum spacing between the dams should be such that the toe of the upstream dam is at the same elevation as the top of the downstream dam.

1.12.7 Temporary Sediment Trap

Temporary sediment traps may be constructed below disturbed areas where the total drainage area is less than 1 acre.

1.12.8 Temporary Sediment Basin

Temporary sediment basins may be constructed below disturbed areas where the total drainage area is equal to or greater than 1 acre.

1.12.9 Other Controls

Other controls such as diversion dikes, level spreaders, temporary seeding, etc. may be used if deemed necessary by the Contractor.

1.13 COMPOSITE UTILITIES

The Contractor shall not run utilities underneath buildings. The Contractor shall avoid running utilities underneath streets and parking lots where practicable. In cases where it is necessary for the utilities to cross existing streets, the Contractor shall install the lines by trenchless excavation methods. No open trenching will be allowed through existing streets, unless written permission is obtained and approved by Ellsworth AFB.

1.14 CATHODIC PROTECTION

Corrosion protection shall be provided for all buried gray ductile-iron piping, fittings, valves, and other water line appurtenances, regardless of pipe material. Corrosion protection shall consist of an anode type cathodic protection system. In addition, all metallic pipe shall have a bond coated system. See SECTION 01007 ELECTRICAL REQUIREMENTS.

1.15 WATER DISTRIBUTION

Waterlines shall be designed and constructed in accordance with the combination of the State of South Dakota Department of Environment and Natural Resources and the Corps of Engineers Guide Specifications, Technical Instructions (TI) Water Supply Technical Manuals (TM), Engineering Manuals (EM), Military Handbooks (MH), and the industry standards listed herein. In the event of conflict, the Contractor shall follow the Local or State requirements/criteria (whichever are more stringent) which govern the waterlines.

- a. In addition to the State of South Dakota criteria listed above, water distribution systems and water service lines shall be designed and constructed in accordance with TM 5-813-5, and UFGS Section 02510A WATER DISTRIBUTION SYSTEM. The Contractor shall be responsible for protection of existing waterlines. If any potable waterlines are damaged during construction, the Contractor shall immediately notify the Contracting Officer. The Contractor shall disinfect all new water lines and any remaining lines which do not remain fully pressurized during construction or connection. The Contractor shall notify the Contracting Officer prior to disinfection of the water lines. The disinfection shall be in accordance with the American Water Works Association Standard AWWA C651, and shall not be considered complete until two consecutive days of bacteriological samples show no contamination. The Contracting Officer shall perform the first bacteriological, lead, and copper analyses at the Government Contractor's expense. All

bacteriological, lead and copper tests shall be performed by Environmental Protection Agency (EPA)- certified laboratories. Copies of results of the analyses shall be forwarded to the Contracting Officer upon receipt.

- b. The Contractor shall design and provide all facilities required to deliver water to the project. Service connections or extensions to the existing water distribution system shall be made without interruption to service. New mains shall be installed with a minimum 72 inch bury. The domestic demand for the new facility served shall be designed in accordance with the "fixture count method" specified by the most current NSPC National Standard Plumbing Code, or by the most current UPC Uniform Plumbing Code. For design of the waterlines, use maximum Hazen-Williams "C" value of 130 for plastic pipe and 120 for other pipe materials.

1.15.1 Domestic Water Distribution and Service Lines

1.15.1.1 Flow Requirements

Water shall be supplied by service lines of appropriate capacity to provide the flows determined to be necessary to meet all requirements of the new facility.

1.15.1.2 Existing Main Lines

The existing water main along Bergstrom will be relocated and is the primary distribution source for the new facility. New mains shall be extended to the new facility from the relocated main as shown on the drawings.

1.15.1.3 Water Distribution Study

EAFB personnel will verify the water flow rates and pressures (static and residual pressures) available in the existing water system by conducting on-site fire hydrant flow testing or by obtaining available data to ensure and confirm the adequacy of the existing water lines. Values obtained from the flow tests (including booster pump status during the test) will be made available to the Design/Build Contractor and shall be used to design all new water lines and the fire distribution system for the buildings so minimal head loss is achieved and maximum residual pressure and flow are obtained.

1.15.1.4 Service Connections

A maximum velocity of 5 feet per second shall be used for metallic piping and 5 feet per second shall be used for nonmetallic piping. A minimum pressure of 40 psi at ground elevation is required under peak domestic flow conditions. Service connections shall be made via corporation stops, appropriate gooseneck connections, or tapping sleeves and valves. The number and maximum size of corporations stops shall be as specified in UFGS Section 02510A WATER DISTRIBUTION SYSTEM.

1.15.1.5 Dewatering, Hydrostatic Testing, and Flushing of Lines

The Contractor shall be responsible for implementing the terms and requirements of UFGS Section 01355 ENVIRONMENTAL PROTECTION for dewatering, hydrostatic testing, and flushing of lines after disinfection.

1.15.1.6 Domestic Service Stop Valve

The new building shall be provided with a separate service and stop valves in areas readily accessible to maintenance and emergency personnel. Stop valves located in walks are prohibited.

1.15.2 Fire Protection Water Services Lines

Water shall be supplied by service lines of appropriate capacity to provide the flows determined to be necessary to meet all requirements of the interior and exterior fire protection. For the design and installation of the fire protection water service lines, the Contractor shall utilize UFC 3-600-01 as necessary. In the event of a conflict between this handbook and any other documents, the subject military handbook shall be considered the minimum acceptable criteria.

1.15.2.1 Fire Flow Data

For determination and documentation of fire protection, EAFB will conduct and provide all fire hydrant flow tests. Data to be included with the flow tests are static pressures, residual pressures, flow rates, date and time tests were conducted, and name of personnel conducting the fire hydrant flow tests. The static pressures, residual pressures, flow rates, test hydrant and flow hydrants shall be shown on the appropriate contract drawings. Fire hydrant flow tests required for fire protection design shall be made in accordance with the procedures specified in NEPA 291.

1.15.2.2 Hydrants

The Contractor shall be required to install fire hydrants for the new facility. One fire hydrant shall be located within a minimum of 150 feet of the building fire department connection. All other hydrants shall be located in accordance with UFC 3-600-01 as necessary. Fire hydrant styles shall meet the requirements of the Ellsworth AFB and shall be Mueller Centurion A-423 (or equal) with a 5 1/4-inch main valve opening, three way.

1.15.2.3 Dedicated Fire Protection Service Line

The Contractor shall be required to provide a separate fire protection line to the new building for interior fire sprinkler protection in accordance with NFPA-24 and UFC 3-600-01. Based upon the preliminary investigation, it is anticipated that the new building will require a 6 inch diameter fire line. The fire protection water service line to the building shall be equipped with a Post Indicator Valve (PIV) that can be readily located by the fire department. The PIV shall not be placed closer than 10 feet from the building it is serving and shall be provided with a tamper switch connected to the building fire control panel. The PIV shall be protected by 6 inch steel pipe bollards, filled with concrete, painted and spaced in accordance with the EAFB Fire Dept. requirements.

1.16 SANITARY SEWER

Wastewater lines shall be designed and constructed in accordance with the combination of the State of South Dakota Department of Environment and Natural Resources and the Corps of Engineers Uniform Facility Guide Specifications, Technical Instructions (TI) and Technical Manuals (TM), Engineering, Military Handbooks (MH), and the industry standards listed herein. The Contractor shall also comply with local codes. In the event of conflict, the Contractor shall follow the Local or State of South Dakota

requirements/criteria (whichever are more stringent) which govern the wastewater lines. The Contractor shall refer to the Corps of Engineers standard details for sewer line details. The standard details are available at the Corps FTP site under Environmental directory.

1.16.1 Design Criteria

In addition to the State and Local criteria listed above, the sewage system shall be designed in accordance with TI-814-10, and UFGS Section 02531 SANITARY SEWERS. No interruption of service shall be allowed on the existing sanitary sewer line. The Contractor shall coordinate with the Contracting Officer as it affects the existing sanitary sewer line. Exterior building sanitary sewer service lines shall be 6 inch minimum diameter to the existing manhole in Bergstrom Drive. All design slopes will be calculated using the Manning formula.

1.16.2 Existing and Possible Future Base Sanitary Sewer Systems

The existing sanitary sewer flows generated at SAFB are conveyed in a gravity pipeline system that generally slopes in a southeast direction throughout the base. The flows are ultimately collected and treated within a lagoon system located near the southeast side of the base.

1.16.3 Sanitary Sewer Service

The closest sanitary sewer service to the new building is located near the northeast corner of the project site on EAFB. It is estimated that an 8 inch diameter gravity sewer main will be required for the new building. Based on the location of the existing manhole in relation to the new building, it is estimated that the sanitary sewer main will be approximately 250 feet in length.

1.16.4 Manholes

Manholes are required at all changes of direction, slope, and size. Manholes shall be spaced not more than 400 feet apart. Manholes shall be located at intersections of streets when possible. Avoid placing manholes where the tops will be submerged or subject to surface water inflow. Where the invert of the inlet pipe would be more than 30 inches above the manhole floor, a drop connection shall be provided. The Contractor shall provide all calculations.

1.16.5 Sewer Mains

The peak diurnal and extreme peak flow rates shall be calculated according to TI 814-1. Curved sewers are prohibited. Pipes shall be designed to provide a minimum velocity of 2 feet per second at the average hourly flow rate, and a minimum velocity of 3 feet per second at the peak diurnal flow rate. Maximum velocity shall be 8 feet per second.

1.17 GAS DISTRIBUTION SYSTEM

See SECTION 01006 MECHANICAL REQUIREMENTS for instructions and engineering information relating to the design of the exterior gas distribution system.

1.18 ELECTRIC AND COMMUNICATIONS

Electric and Communication Manholes being constructed for this site shall tie to the defined connection points for power and communications. See

SECTION 01007 ELECTRICAL REQUIREMENTS for additional information and requirements.

1.19 EXCAVATION, TRENCHING, AND BACKFILLING FOR UTILITIES SYSTEMS

1.19.1 Trenches

Sewer and water lines, mains or laterals, shall be placed in separate trenches. The separate trenches shall maintain a minimum horizontal separation of 10 feet and the bottom of the water line shall be at least 18 inches above the top of the sewer. Sewers crossing above potable water lines shall maintain a vertical separation of 18 inches and must be constructed of suitable pressure pipe or fully encased in concrete for a distance of 10 feet on each side of the crossing. A trenchless excavation method shall be required when an underground utility line crosses any roadway.

The trench shall be excavated as recommended by the manufacturer of the pipe to be installed. Bedding and initial backfill material shall be in accordance with the manufacturer's recommendations. Where no manufacturer's installation manual is available, trench walls shall be excavated to a stable angle of repose as required to properly complete the work. Trench excavations shall adhere to requirements prescribed in EM 385-1-1 SAFETY AND HEALTH REQUIREMENTS manual. Special attention shall be given to slopes which may be adversely affected by weather or moisture content. Excavation, trenching, and backfilling shall be performed in accordance with UFGS Section 02316A EXCAVATION, TRENCHING AND BACKFILLING FOR UTILITIES SYSTEMS. Groundwater is not expected to be encountered during the excavation of utility trenches, however, the Contractor shall coordinate and confirm with the Contracting Officer the depth to groundwater if the construction is done during the wet season. Non-Ferrous metal pipe shall be buried with tracer lines.

PART 2 NOT USED

PART 3 NOT USED

-- End of Section --

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SECTION 01003

ARCHITECTURAL BUILDING REQUIREMENTS

PART 1 ARCHITECTURAL BUILDING REQUIREMENTS

1.1 FUNCTIONAL PLAN REQUIREMENTS

1.1.1 General

The purpose of this project is to provide a complete and usable squadron operations facility at Ellsworth AFB, South Dakota, as described herein. The facility, site design and other associative amenities shall meet standards established by the Air Force.

This project consists of a linear, one-story building that steps down twice in order to conform to an existing slope.

The new facility shall be clad in materials that are consistent with the architectural theme established for buildings located in the EAFB Flightline Support District, especially the 34th Bomber Squadron Operations Facility. These materials include concrete masonry units (CMU), metal wall and roof panels, translucent wall panels, glazing systems and standing seam metal roofing.

This facility includes the following areas: auditorium, open office areas, enclosed private offices, two-story lobby, conference rooms, men's and women's restrooms, stairs, elevator, training and storage areas, locker rooms, maintenance areas, and building service areas.

Architectural floor plans are provided on the enclosed "A1.00" series sheets. The facility design is based upon English measuring units. All dimensions shown on Architectural sheets are indicated in English units. The overall design and configuration can be altered slightly, subject to Government approval, and as long as the total area is not reduced from that shown on these Floor Plans and does not exceed 58,000 gross square feet. Design alterations will be allowed as required for material modular sizing considerations, exterior wall system widths, economy of detail connections, access for utilities and handicap provisions.

The overall building design and site configuration has been developed by the Government and approved by the Base. It was determined by the Government that this was the best solution to meet the User's needs for the Design Development of this project. However, other design solutions which slightly modify the furnished solution will be accepted and reviewed on their design merits against the furnished criteria, subject to Government approval. Solutions which provide more net usable floor space than the Government drawings would be considered desirable.

Design alterations will only be allowed as required for: (1) material modular sizing considerations, (2) economy of detail connections, (3) access to/for utilities, (4) accommodation of required structural, mechanical, plumbing, fire protection, electrical, and communication systems, (5) handicap provisions, and (6) compliance with applicable codes.

1.1.2 Facility Design

The new building location is on Ellsworth AFB, adjacent to Rapid City, South Dakota. Additional information describing site planning is discussed in Section 01002 SITE WORK.

The layout of the mechanical, electrical and communication spaces (rooms & chases) are suggestive and may require wall and ceiling configurations to be slightly altered to conform with equipment requirements. Additional information regarding the mechanical and electrical rooms of this facility are described in further detail in their respective sections.

Unless shown on the plans, columns and in-wall columns which protrude into spaces will not be allowed within any of the room spaces as laid out in furnished plans. Columns and other structural elements must be concealed within the wall structure. Exceptions to this requirement include the Main Lobby area and the maintenance bay areas.

Fire separation walls and egress from the facilities shall meet or exceed the requirements of NFPA 101 - Life Safety Code. This facility will be protected by a fire sprinkler system throughout the building as part of the requirements. See Section 01008 FIRE PROTECTION REQUIREMENTS.

1.2 DESIGN CRITERIA

The technical specifications provided shall serve as the minimum design standards established for this project. Design publications listed in each specification section shall be used as sources of criteria for design. The criteria from these sources may be supplemented, but not supplanted, by applicable criteria contained in nationally recognized codes, standards, and specifications.

1.2.1 Technical Specifications

The government-provided technical guide specifications (available on the CD-ROM furnished with this RFP solicitation) shall be completely edited and fully coordinated with the drawings to accurately and clearly identify the product and installation requirements for this facility.

The provided specifications define the minimum requirements and level of quality for items of equipment, materials, installation, and testing that shall be provided for the facility. Where items of equipment, materials, installation, or testing requirements are not covered in the provided specifications, special sections, or within each guide specification or new specifications, sections shall be prepared to cover those subjects.

Provisions in the design and construction of this facility shall be made to accommodate building expansion and contraction both during construction and after the facility is completed and occupied. Structural steel, roof framing and finish materials shall accommodate movement from expansion and contraction due to temperature differentials that will seasonally occur, and which occur throughout the day, without damage to adjacent structure or connections, of other elements.

1.2.2 Required Design Criteria

The design publications listed below shall be used as sources of criteria for the architectural design. The most current edition of the code or standard shall be used as criteria for the design. The criteria from these sources may be supplemented, but not supplanted, by applicable criteria contained in nationally recognized codes and standards.

Some of these publications may be available to download in Acrobat PDF or MS Word file format at the following internet addresses:

<http://www.afcesa.af.mil/publications/ETLs/default/html>

<http://www.access.gpo.gov>

<http://www.access-board.gov>

<http://store.mil-standards.com>

<http://www.hnd.usace.army.mil/techinfo/index.asp>

<http://www.afcesa.af.mil/default.htm>

<http://www.e-publishing.af.mil>

<http://www.ccb.org/ufgs/ufgstoc.htm>

<http://www.dtic.mil>

AAMA/NWWDA 101/I.S.2-97 - Voluntary Specifications for Aluminum, Vinyl (PVC) and Wood Windows and Glass Doors

Aluminum Association (AA) - AA-DAF-45 (1997) Designation System for Aluminum Finishes

Air Force Civil Engineer Support Agency (AFCEA) - Unified Facilities Guide Specifications (UFGS)

Ellsworth AFB Design Compatability Standards (1998) (Attachment 4)

Ellsworth AFB Standards for Design (March 2001)(Attachment 5)

Corps of Engineers, USACE TI 809-29 Structural Considerations for Metal Roofing (03 August 1998)

Department of Defense, UFC 4-010-01 DoD Minimum Antiterrorism Standards for Buildings (31 July 2002)

International Building Code (IBC), 2000 Edition

Life Safety Code, NFPA 101, 2000 Edition

Standard for Fire Doors and Fire Windows, NFPA 80, 1999 Edition

Standard Methods of Fire Tests of Door Assemblies, NFPA 252, 1999 Edition

NFPA 10, 105, 252 and other applicable sections.

Uniform Federal Accessibility Standards (UFAS), Federal Standard 795

Americans with Disabilities Act (ADA Accessibility Guidelines)

ADA Architectural Design Checklist (Attachment 2)

Unified Facilities Criteria UFC 3-600-01, Fire Protection for Facilities

Engineering, Design and Construction (17 April 2003)

Design and Construction Standards and Execution of Facility
Construction Projects, Air Force Instruction AFI 32-1023, 19 July 1994

Standard Facility Requirements, Air Force Instruction AFI 32-1024, 31
May 1994

Air Force Installation Security Program, AFI 31-101, 1 March 2003
(Attachment 8)

Air Force Security, AFI 31-401 ACC Supplement 1, 28 Jan 2003

Facility Requirements, Air Force Handbook 32-1084, 1 September 1996

Air Force Interior Design Guide, HQ AFCEE/DC
(<http://www.afcee.brooks.af.mil/dc/dcd/interior/intdespu.asp>)

ACC (Air Combat Command) Architectural and Interior Design Standards
(June 2001) (Attachment 3)

American Society of Civil Engineers ASCE 7-95

Occupational Safety and Health Administration (O.S.H.A.) Standards

Underwriters Laboratory, UL 752 - Standard for Bullet Resisting
Equipment, 9th Edition.

Architectural Woodwork Institute (AWI) Quality Standards, Guide
Specifications and Quality Certification Program

National Electrical Manufacturers Association (NEMA) LD3-1995

Department of Defense Document DOD 5200.1-R, Appendix 7

Tile Council of America (TCA) Handbook for Ceramic Tile Installation

Gypsum Association, GA-214 Recommended Levels of Gypsum Board Finish

1.2.3 SPACE CALCULATIONS

1.2.3.1 Definitions

Gross Building Area - This area is measured to the outside face of the exterior closure walls. Calculate the following spaces as full area: basements, above grade floors, mezzanines; service and equipment rooms; boiler plant and heater rooms; penthouses; enclosed passages, walks, porches, balconies, stairs and loading facilities; and raised and covered loading platforms. Calculate the following spaces as half area: covered (but not enclosed) walkways, ramps, porches and balconies; covered and uncovered open stairs; uncovered raised loading platforms; covered ground level and covered/uncovered below grade loading facilities. Exclude the following spaces: roof overhangs, utility tunnels, exterior uncovered walks, ramps, and paved terraces; and enclosed crawl and utility spaces with an average ceiling height of less than 7 feet that are not considered half scope.

1.2.3.2 Area Requirements

Gross area for the new facility shall be as indicated on the Drawings.

1.3 DESIRED IMAGE AND ARCHITECTURAL COMPATIBILITY

The Contractor shall verify all existing conditions and dimensions during design and prior to construction.

The building shall fit the site and be compatible with the surrounding environment. Building facades and elevations shall match the appearance of the enclosed elevation drawings.

Features of scale such as horizontal banding and changes in texture shall be used to tie the building together with the ground line as shown on the drawings. Colors and materials selected for the exterior of this building shall be as shown on the drawings. Materials selected shall be compatible with "commercial" construction.

Interior finishes shall comply with the requirements specified in Section 01004 INTERIOR DESIGN REQUIREMENTS. Finish locations are identified in the Room Finish Schedule.

1.3.1 Design Theme

The use of a sloped roof over the primary building envelope complies with the Ellsworth AFB Design Compatibility Standards (Attachment 4) and Ellsworth AFB Standards for Design (Attachment 5) and reinforces the horizontal emphasis of the design. The metallic wall and roof panels speak to the high tech mission of the base, bridging the space between the masonry volumes. The public entry to the building is accentuated by a gently curved metal panel-clad roof that rises above the overall structure directing daylight to the interior via a translucent wall panel clerestory. A cantilevered metal panel-clad canopy defines the public entry and provides protection from the weather. The masonry side walls of the entry extend into the lobby to further reinforce the interior/exterior connection.

1.3.2 Design Objectives and Provisions

1.3.2.1 Adaptation of the Building to the Site and Composition of Masses

The new facility occupies a unique position, next to another existing B-1 Bomber Squadron Operations Facility lying on a slope above the runway apron at the edge of the B-1 Bomber Hangar area. Bergstrom Drive connects this facility to the main body of the base. The site is dominated by the broad, open sweep of the rolling grasslands with panoramic views of the Black Hills to the west and the north. As a gesture to the stone that is abundant in the Black Hills area, light-colored CMU material is used in separate banding layers to visually anchor the structure to the landscape. The horizontal aspect of the topography is expressed in kind by the single story, linear form of the building. The dark CMU, angular roof shapes, and fenestration are similar to other Squad Operations facilities nearby, and relate in color and form to the Black Hills in the distance.

Consistent with Ellsworth AFB Design Compatibility Standards (Attachment 4) and Ellsworth AFB Standards for Design (Attachment 5) requirements, punched windows are incorporated on the exterior elevations. Broader expanses of glass are used at the entry and lobby elevations to define the public areas. Daylight is also introduced to the inner parts of the building via translucent wall panel clerestory openings.

1.4 BASE DESIGN REQUIREMENTS

The Ellsworth AFB Standards for Design (Attachment 5) contains specific requirements for Architectural Standards. These requirements provide specifics about exterior materials and colors that must be used for all buildings located outside the Restricted Area. Throughout this specification section, separate paragraphs have been included for "Architectural Standards" as a part of requirements for exterior building materials. Where these standards are included in this specification, they are specific material and color requirements unique to Ellsworth AFB. Ellsworth AFB must specifically approve any deviation from these standards prior to use of any nonconforming materials or colors on this project.

1.5 TYPE AND METHOD OF CONSTRUCTION

1.5.1 Facility Construction

This facility shall be designed as permanent construction. The definition of permanent construction means "facilities designed and constructed to serve a life expectancy of more than 50 years", should be energy efficient, and must have finishes, materials, and systems selected for low maintenance and low life-cycle cost. The desired image of this building shall follow information provided in this RFP and the attached drawings.

Types and methods of construction are limited to the criteria established in this section and all other sections of the RFP and shall meet all governing code applications.

Where wood construction is used, such as at window and door opening rough bucks, wood in contact with the ground, etc., the wood products shall be treated. Primarily, wood shall be used in an ancillary use (blocking, etc), not as a prime construction material.

Concrete masonry units (CMU) and/or concrete walls used in this building shall be developed on a standard English module. Standardization of masonry wall design shall be developed which results in as few cut blocks as possible. Masonry structural properties shall comply with requirements outlined in Section 01005 STRUCTURAL REQUIREMENTS.

Walls, windows, floors, and roofing system shall be permanently constructed and attached to each other. All construction shall be done in a workmanlike manner, properly installed square and plumb as intended, and finished as indicated.

Methods, materials, systems, etc. shall be of a quality that requires little or no maintenance.

1.5.2 Exterior Walls and Finish Materials

Exterior walls and finish materials shall be selected on the basis of architectural compatibility and appearance in accordance with the provided design. The exterior features of this facility shall reflect the functional areas of the interior spaces. The outside face of the exterior walls shall be primarily composed of 4" thick CMU veneer (some split-ribbed, some burnished/ground face), metal wall and roof panels, translucent wall panels, and glazing systems. Provide expansion joints and control joints for all exterior materials as required by the Air Force Civil Engineer Support Agency (AFCEA) - Unified Facilities Guide Specifications (UFGS). Exterior walls shall have a minimum "U" Value of 0.07 based on aged

insulation values for the entire exterior wall construction. Exterior gypsum soffit board is not allowed. Exterior finishes and colors shall be as shown on the Drawings and specified herein.

Metal studs shall back up the metal wall and roof panel system. The six inch metal studs shall be insulated with 6 inch batts to provide a minimum R-19 thermal insulation value, and sheathed. The metal panel installation system shall be installed over the sheathing. All metal wall panels shall be installed with clips to compensate for tolerances in the steel structure. All joints within and between exterior wall finish materials shall be properly sealed to prevent air and moisture infiltration. In particular and in addition to air and moisture sealant requirements, sealant systems for exterior metal wall panel joints shall be designed to be moth-proof. Contractor shall coordinate exterior systems to ensure overall building shell performance, and to ensure compatibility of materials and connection details.

1.5.2.1 Exterior Architectural Standards

CMU - Use modular CMU (concrete masonry units) by Gage Brothers Concrete Products, Inc. of Harrisburg, South Dakota, or equal.

CMU-1 (exterior) shall be burnished (ground) face units. Color: #9 Brownstone.

CMU-2 (exterior) shall be split-ribbed (broken-off fluted) units. Color: #5B Seashell.

Metal Wall and Roof Panels - Use Alucobond Silver Metallic A3001-DXLE. Equal by another manufacturer is acceptable.

Exterior Paint Color - Match silver color of exterior metal wall and roof panels at any items requiring paint that are a part of the Entry/Lobby feature part of the building. Match Pratt and Lambert No. 2032 Taupe for exterior metal doors and frames, louvers, bollards, coping, fascia, gutters and downspouts.

1.5.2.2 CMU/Mortar

Specify CMU and mortar using UFGS Section 04200 Masonry. Mortar shall be colored to blend with the CMU unit colors utilized.

1.5.2.3 Not Used.

1.5.2.4 Metallic Wall and Roof Panels

Metallic wall and roof panels shall be composite aluminum faced type equal to Alucobond. Specify as required in Paragraph 1.2.1, second paragraph.

1.5.2.5 Translucent Wall Panels

Translucent wall panels shall be sandwich composite panels of white/crystal interior and exterior fiberglass-reinforced polyester sheets, heat and pressure bonded to extruded aluminum grid/fiberglass insulation structures. Panels shall have a 'U' value of 0.18 and light transmission of 20 percent. Specify panels using UFGS Section 08600 Skylights.

1.5.2.6 Sectional Overhead Doors

Sectional overhead doors shall be insulated flush steel panel doors with electric operators. Specify doors using UFGS Section 08361 Sectional Overhead Doors.

1.5.2.7 Operable Partitions

Operable partitions for Mission Planning rooms shall be top-supported, manually-operated accordion type partitions equal to Modernfold Soundmaster Model SM8 with a minimum STC of 39. Partitions shall be covered with acoustical fabric selected by the Contracting Officer from manufacturer's standard selections. Specify operable partitions using UFGS Section 10655N Accordion Folding Partitions.

1.5.2.8 Auditorium Seating

Auditorium seating shall be Concerto by KI of Green Bay, Wisconsin or equal, with the following requirements:

- Dimensions: 21" and 22" center of arm to center of arm as required to accommodate 200 chairs.
- Finish Name/Number: Black frame and arm caps, LSC - Select Cherry laminate end panels and tablet arms.
- Fabric Name/Number: Maharam Fortis 403402 022 Barn.
- Description: Power and data shall be provided for all fixed seating, aisle lights on fixed seating, special small scale table arms 14 - left, 186 - right, 2 sets of three removable seats for ADA compliance.
- Quantity: Total 200

1.5.3 Interior Wall Construction

All interior walls shall be permanent, non-conbustible construction, and shall be designed to withstand a 10 psf wind load with a maximum mid-span deflection of L/360. Demountable partitions shall not be considered acceptable. Typical interior walls shall be framed with metal studs, with one layer of gypsum wallboard on each side. Gypsum wallboard shall not be less than 5/8" thick. Regardless of the fire-rating of the wall or ceiling, all gypsum board used throughout this project shall be "Fire Code" or "Type X". Gypsum wallboard located in public corridors and other areas open to public access and subject to possible abuse shall be abuse-resistant type gypsum wallboard, providing a heavy-duty upgrade over standard gypsum wallboard.

Walls of Arms Room 107 shall conform to the requirements of AFI 31-101 (Attachment 8).

Steel studs shall be sized according to the furnished design and wall heights required. Steel studs for walls to receive ceramic tile shall be sized for gauge, thickness, and spacing as recommended by the Tile Council of America (TCA). Concrete masonry walls will consist of a minimum of 8 inch nominal wall width, or greater if required for building height.

Interior walls requiring physical or information security, fire ratings, sound ratings, or other walls extending to the underside of the roof structure shall be designed and constructed in accordance with manufacturer's approved, tested system designs. These walls shall also have provisions for structural deflection of the roof structure above, leaving a space between the top of the wall and the bottom of the roof structure above. In addition interior walls around the Electrical rooms, communications rooms, and walls required by code shall be designed and

constructed as full height to the underside of the structure above; such spaces shall be stuffed full of safing insulation at fire-rated walls and batt insulation at walls intended to provide information security or sound isolation.

1.5.3.1 Interior Masonry Walls

Concrete masonry unit (CMU) walls shall be used where shown on the drawings (at upper and lower Lobby and at Vestibules). CMU shall be modular units by Gage Brothers Concrete Products, Inc. of Harrisburg, South Dakota, or equal.

CMU-3 shall be burnished (ground) face units. Color: #5B Seashell. Mortar color for CMU-3 areas shall be colored to blend with the CMU unit color.

1.5.4 Corridor Ceilings

For corridor ceiling locations that use suspended grid with lay-in panels, provide hold-down clips throughout system.

1.5.5 Interior Wall Finishes

Interior wall finishes shall be high quality, low maintenance finishes suitable for the environment of this building. Provide Level 4 gypsum wallboard finish per Gypsum Association GA-214, Recommended Levels of Gypsum Board Finish.

Interior wall finishes to receive paint shall have a light "orange peel" texture.

1.5.6 Floors - General

Interior floors are to be predominantly concrete slab on grade and a small amount of structural concrete slab. See Section 01005 STRUCTURAL DESIGN REQUIREMENTS for additional information.

With the exception of recesses for floor tile, all finish floors shall be constructed at the same elevation for each floor.

Floors in toilet rooms shall be level except in the immediate areas around floor drains, which shall be sloped.

1.5.7 Floor Finishes

Interior floor finishes shall be high quality, low maintenance finishes suitable for the environment of this building.

The mechanical rooms, electrical rooms, and communication rooms shall have exposed concrete finish and shall be cleaned and sealed with a concrete hardener for durability and minimization of dust.

Interior floor finishes are described in Section 01004 - INTERIOR DESIGN REQUIREMENTS. Finish location is identified in the Room Material and Finish Legend.

1.5.8 Ceiling Finishes

Ceiling finishes shall be high quality, low maintenance finishes suitable for the environment of this building.

Ceiling finishes for this facility shall be as shown on the Drawings.

Ceiling finishes to receive paint shall have a light "orange peel" texture.

It will be acceptable for mechanical, electrical, and communication equipment rooms to have exposed structures that do not require finished ceilings. However, exposed structural elements in these areas shall be painted and possibly receive a spray-applied fireproofing depending on structural design and compliance with applicable building and fire safety code requirements.

1.5.8.1 Ceiling Heights

Ceiling heights shall be as indicated on the Drawings.

1.6 FUNCTIONAL REQUIREMENTS

1.6.1 Equipment and Furnishings

1.6.1.1 Contractor Furnished and Contractor Installed Equipment

The following items are listed to clarify the split between Contractor Furnished/Installed equipment vs. equipment provided by the User.

Contractor Furnished/Contractor Installed equipment within this facility shall include, but not be limited to, the following:

Pre-wiring, electrical and mechanical stub-ups, structural mounting supports, etc. required for all appliances, electronics and equipment furnished under the O&M Options. See Sections 01006 and 01007 for additional information.

Toilet accessories and towel bars, and as listed in paragraph titled "Toilet Accessories".

Fire extinguisher cabinets (fire extinguishers supplied by the EAFB Fire Department). Contractor shall coordinate with the EAFB Fire Department for requirements on sizes and types of cabinets and extinguishers.

Casework, including duty desk, base cabinets and wall cabinets, and window sills.

Mounting brackets for TV monitors and projection equipment.

Bridge crane/rail system for Mobility Storage Room 144.

Motorized projection screens.

Mop sinks and mop holder hardware at janitor's closets.

Key storage cabinets.

Auditorium seating.

Master clock system.

Signage - Interior, Exterior, and Building Number.

Display cases.

1.6.1.2 Equipment Provided under O&M Options.

The following items are listed to clarify the split between Contractor Furnished/Installed furniture, equipment, appliances and electronics under the O&M Options vs. equipment provided by the User.

Contractor Furnished/Installed furniture, equipment, appliances and electronics within this facility under the O&M Options (see Attachments 30, 31 and 32) shall include, but not be limited to, the following:

Heritage Room 249 casework, including beverage serving unit and adjoining half-wall with shelf.

Workbenches.

Furniture, files, safes.

Markerboards.

Projection equipment.

Projection screens (manually-operated).

Public address system equipment.

Guard shack.

Portable mezzanine structure/stairs/railings.

Lockers.

Washer.

Dryer.

Ice machines.

Microwave ovens.

Ranges.

Shower curtains and rods.

Open shelving/racking.

Window blinds.

Artwork.

Plants.

1.6.1.3 Government Furnished and Contractor Installed Equipment

The following items are listed to clarify the split between Government Furnished/Contractor Installed equipment vs. equipment provided by the User.

Government Furnished/Contractor Installed equipment within this facility shall include, but not be limited to, the following:

Refrigerators/freezers (relocated from Building 7503).

TV monitors (relocated from Building 7503).

Pool table (relocated from Building 7503).

Foosball table (relocated from Building 7503).

Arms room cabinet and test barrels (relocated from Building 1011).

Wood air crew lockers (relocated from Building 1011).

1.6.1.4 Equipment provided by User (N.I.C.)

The following items are listed to clarify the split between User Furnished/Installed equipment vs. equipment provided by the Contractor.

User Furnished/Installed equipment within this facility shall include, but not be limited to, the following:

Fire extinguishers (cabinets provided by the Contractor).

Vending machines.

Office equipment; computers, copiers, printers, faxes, telephones, etc.

1.6.2 Occupational Safety and Health

Building design shall comply with OSHA Occupational Safety and Health Standards criteria for all items which must be included in the design to ensure safety compliance.

1.6.3 Handicapped Accessibility

The building shall comply with handicap accessibility requirements as outlined in the Americans With Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities, as well as the Uniform Federal Accessibility Standards (UFAS). Since this is a military facility, it is understood that building staff will be able-bodied military personnel. It is possible, however, that visitors to the building may occasionally be handicapped. Public toilets for handicapped access shall be provided in the building.

1.6.4 Sound and Vibration Control

Standard materials and installation procedures shall be incorporated into the facility development for sound and vibration control. When constructing walls, floors, ceilings, and roof, materials shall be selected that will impede transmission of equipment vibrations and other noises between rooms and within a room.

Without exception, all interior walls shall extend up to the underside of structure, or be capped with solid ceiling construction to limit sound transmission from one space to another. Provide multiple layers of drywall, sound attenuation batt insulation, or some other construction that will reduce sound transmission through the walls. Acoustical sealant shall be provided at all perimeters, penetrations and outlet boxes at walls around

Secure Conference Rooms. See AFI 31-401, ACC Supplement 1 for additional wall requirements at Secure Conference Room areas shown on the Floor Plan.

For secure Conference Room areas, follow all criteria found in AFI 31-401, ACC Supplement 1.

Provide special acoustic measures to minimize transfer of sound from mechanical rooms, vertical duct chases and devices to occupied spaces.

Provide "design value" STC ratings as follows:

Walls:	Around Secure Conference Rooms	STC-50
	Office to office	STC-47
	Office to corridor	STC-47
	All other walls	STC-45
Doors:	Doors at Secure Conference Rooms	STC-53
	All other doors	STC-25 to 28

Floor / Ceiling Construction: Equal to wall rating at all locations.

Due to runway proximity, the site is in a 75 to 80 db noise zone; the required noise level for this facility is 55 db, therefore the building shell shall attenuate 20 to 25 db. Contractor shall submit calculations substantiating that the building shell design will attenuate the STC criteria listed above.

1.6.5 Physical Security

Conventional security measures, such as: door locking hardware, shall be incorporated into the facility design and development.

Structural requirements for security design are included in Section 01005 STRUCTURAL REQUIREMENTS.

1.6.5.1 Standoff Distances

The building must be located a minimum distance of 80 feet from streets, access drives, and parking lots to comply with site-specific security requirements.

1.6.5.2 Trash Enclosures

All trash enclosures must be located a minimum distance of 80 feet from the building to comply with site-specific security requirements.

1.6.6 Economy of Building Construction, Operation, and Maintenance: Life-Cycle Cost Effectiveness

1.6.6.1 Economy

Where feasible, use materials readily available within the local area.

No special or unique forms of construction shall be used and skilled workers within the area shall be familiar with the proper methods required to build this facility.

1.6.6.2 Operation and Maintenance

Material selections shall be based upon reducing operation and maintenance costs. All materials shall be easy to clean and resist soiling.

1.7 TECHNICAL REQUIREMENTS

1.7.1 Miscellaneous Metals

1.7.1.1 Handrails and Guardrails

Handrails and guardrails shall be fabricated of steel pipe for painted finish and shall meet the requirements of Life Safety Code, ADA, UFAS, IBC and OSHA, and shall closely match the design and finish as shown on the drawings.

1.7.1.2 Access Doors and Panels

Access doors and panels shall be flush type. Frames for access doors shall be fabricated of not lighter than 16 gauge steel with welded joints and finished with anchorage for securing into construction. Access doors shall be a minimum of 14 inches by 30 inches and of not lighter than 14 gauge steel, with stiffened edges, complete with attachments. Access doors shall be hinged to frame and provided with a flush face and a keyed operated latch. Exposed metal surfaces shall have a shop applied prime coat. Finished paint coat shall match surrounding surfaces. Panels shall be installed in uninhabited rooms (i.e., closets) and/or non-conspicuous locations, such as above suspended grid ceilings.

1.7.1.3 Exterior Louvers

Exterior louvers shall be architectural quality and design, with anodized aluminum finish. Louvers shall be stormproof to prevent windblown rain and snow from entering the building, and shall be provided with both bird screen and insect screen design. Louvers shown on the Drawings are suggestive; the Contractor shall provide proper size and quantity to meet equipment requirements.

1.7.1.4 Bike Racks

Bike racks shall match the design shown on the drawings.

1.7.1.5 Chain Link Fencing and Gate

Interior chain link fencing shall be as shown on the Drawings and shall be 8 feet high with bolt-down connections of vertical pipes to floor slab. Interior chain link gates shall be 4 ft. wide (per leaf) x 8 ft. high. Interior chain link fencing and gates shall be located in Tool Storage Room 138 area as directed by the User after the building has been occupied by the User; length of fencing in this room shall be as shown on the drawings. Section SECTION 01002 SITE WORK for exterior chain link fencing and gates.

1.7.1.6 Miscellaneous

Detailing and construction of louvers, motorized dampers, exhaust fan louvers, and ductwork shall be coordinated with the Architectural features of this facility to provide for a clean exterior building elevation.

1.7.2 Roof Design

Structural Standing Seam Metal Roofing (SSSMR) shall be used for all roof

surfaces of the facility, except curved Lobby roof. Roofing design and insulation shall follow the requirements of the UFGS Section 07416A Structural Standing Seam Metal Roof (SSSMR) System. Provide the following specific features:

- 20-year system weathertightness warranty;
- Resistance to wind gusts up to 100 mph;
- 220 degree F maximum temperature range;
- Externally reinforced panel seams are prohibited;
- Minimum 1 ½" standing seam height;
- Aluminum-zinc alloy (AZ 55) coated steel panels;
- Die-cast metal closures, supplemented by molded closure strips;
- Factory-applied color finish from standard color offering;
- Polyvinylidene fluoride (PVF2), 2 mil thick coating modified with a proprietary resin for toughness, medium gloss finish, over a primer of 0.2 mil thickness.

Insulation thicknesses shall be selected by the Contractor, but the roof shall have a minimum "U" Value of 0.03 based on aged insulation values for the entire exterior roof construction. Roof subpurlins shall be placed in the roof deck flutes and shall be perpendicular to the structural supports below. Roof system shall provide a 20-year-minimum full warranty. Gypsum board may be necessary to comply with fire ratings or to attenuate exterior aircraft noise.

In general, the roof shall consist of the following components from top to bottom:

- Prefinished steel (aluminum not allowed) SSSMR on
- Roofing slip sheet on
- Blanket insulation (compressed) on
- Rigid insulation on
- Gypsum board (if used) on
- Vapor retarder on
- Prime-painted roof deck on
- Structural supports.

The inclusion of the additional blanket of fiberglass insulation sandwiched between the rigid insulation and bottom of roofing panels is to help minimize noise and vibration.

The critical aspects of the roofing systems shall be appearance, water penetration resistance, wind uplift resistance, and minimal maintenance.

Rooftop mechanical equipment is prohibited except as specified in Paragraph 1.2.6 of Section 01006.

Coordinate location of all roof penetrations for plumbing vents, etc., so that they will occur on the rear roof slope of the building.

Include ice and water barrier substrate material beneath the SSSMR material and up sidewalls behind wall substrate material at the interface of vertical wall faces and sloping roof surfaces (areas vulnerable to snow drifting) as required to eliminate leaks and conform to the requirements needed to obtain the warranty requirements herein. Special attention shall be paid to roof areas around the main Lobby roof feature.

1.7.2.1 Roof Slopes

Roof slopes shall be as indicated on the Drawings.

Primary roof slope shall be accomplished by sloping of the structural roof framing members.

1.7.2.2 Roof Drainage System

Roof drain(s) shall be provided for the roof above the entry canopy on the east face of the building. Gutters and downspouts shall not be provided, but sloped, sheet metal water diverters shall be provided above all exterior doors, entrances and adjacent stoops and walkways to direct large quantities of water from falling over entrance doorways (diverters shall be part of the SSSMR system). The edge of all roofs shall incorporate a drip edge detail as part of the fascia design. The water runoff from the roof shall be controlled by a perimeter drainage system at grade level; see Section 01002 SITEWORK for additional information.

1.7.2.3 Snow Guards

Snowguards shall be provided at all entrances, doors and adjacent walkways to the facility. Snowguards shall be furnished where indicated on the drawings and shall be the standard product of the manufacturer, except that color and finish of the snowguards shall exactly match the roof color and finish. Clamps and screws shall be stainless steel. Snowguard design shall be appropriate for the type of roof, indicated pitch, and expected mean annual snowfall. Snowguards shall utilize clamps that attach to the standing seams; any penetrations through the roofing surface or standing seams are expressly prohibited. Snowguard design and/or installation shall not alter required SSSMR warranty. Snowguards shall be Snobar (with ice stopper attachments) as manufactured by Action Manufacturing, LLC, or approved equal.

1.7.2.4 Quality Assurance

Contractor shall include a Quality Assurance Plan that includes a checklist of points to be observed, prior to start of roofing work.

Roof shall be designed to conform to the wind uplift criteria in ASCE 7-95. Contractor shall submit calculations and other supporting information indicating that the roof design meets this criteria.

1.7.2.5 Warranties

Each roof system shall provide a 20-year minimum warranty. Warranties shall cover water-tightness and include extended wind warranty against wind tear-offs for wind gusts up to 100 mph. Roof systems shall incorporate only those components that are acceptable to the manufacturer that is issuing the warranty.

1.7.2.6 Architectural Standards

Standing Seam Roofing - Factory finish standing seam. Color shall be Silver to match Alucobond wall panels at roof/sidewall of Auditorium. All other roofing shall be MBCI dark brown to match adjacent 34th Squad OPS building. Approved equal color of another manufacturer is acceptable.

Standing Seam Fascia, Trim, and Accessories - Same as SSSMR.

Generally, provide metal roofing system and fascias, trims, and accessories in one coordinated color, such that there are not noticeable differences between colors from one location to another on the building exterior.

1.7.2.7 Lightning Protection

Lightning protection shall be fully integrated and coordinated with the metal roofing system detailing, and installation shall be accomplished to not jeopardize in any way the roofing system warranty. All down conductors shall be fully concealed, and shall not be visible running down the exterior building faces.

1.7.3 Sheet Metalwork, General

Contractor shall include a Quality Assurance Plan that includes a checklist of points to be observed, prior to start of sheet metal work. All cavity thru-wall flashing shall be a metal type.

Fascias and vertical wall panels at Auditorium shall be SSSMR material and shall have profile matching the sloped SSSMR, and a stable substrate as required to prevent "oil-canning" effect.

1.7.4 Exterior and Interior Doors and Frames

Provide personnel doors meeting the requirements below. Door locations and sizes in utilitarian (mechanical/electrical/comm.) areas may be adjusted to accommodate equipment. Other door location and size changes may be made with the approval of the Contracting Officer. Door locations may also be modified to comply with codes. Unless stated otherwise, all doors shall be "flush" style.

a. All exterior doors shall open onto a structural concrete landing or stoop and shall conform to ADA, UFAS and NFPA 101 for floor slope at the doors.

b. Exterior and interior doors at Vestibules 103, 136, 152, 200 and 246, and exterior doors at Rooms 119, 122 and 249 shall be incorporated into the storefront window wall system as shown on the Drawings. Design of all storefront doors shall be "medium stile" with an 8" high bottom rail as shown on the drawings.

c. Other exterior doors shall be heavy duty flush steel type of minimum 16 gauge face sheets with 16 gauge pressed steel frames, shall be weather tight, and insulated to meet an R-value of 10. The exterior door and frame at Auditorium 224 shall have an STC rating of 53. These doors shall be complete door and frame assemblies with weatherstripping, door bottoms, and ADA/UFAS-compliant thresholds. Vision panels shall be installed in doors as shown on the drawings.

d. Interior doors in fire-rated walls shall be fire-rated assemblies according to the fire-rating requirements of the walls in which they occur. All fire doors shall be in accordance with the requirements of NFPA 101, 80 and 252.

e. Interior doors at Comm. Room 143 shall be heavy duty flush steel type of minimum 16 gauge face sheets with 16 gauge pressed steel frames.

f. Interior doors at Auditorium 224, Control 225 and the corridor door at

Mission Debrief 230 shall be premium "A" grade red oak veneer doors with 16 gauge pressed steel frames. To achieve desired STC rating, doors may require hollow metal construction with applied wood veneer. These doors and frames shall be part of assemblies that are factory-tested to assure compliance with the STC ratings indicated.

g. Interior doors at Arms Room 107 shall be constructed of solid core wood with heavy gauge steel face sheets with 16 gauge pressed steel frames. These doors shall comply with AFI 31-101 (Attachment 8).

h. Other interior doors shall be constructed of solid core wood consisting of AWI Custom Grade red oak doors with red oak frames. Sidelights and other borrowed light frames shall also receive AWI Custom Grade red oak frames. Vision panels shall be installed in doors as shown on the Drawings. Door louvers shall not be used.

1.7.4.1 Architectural Standards

Exterior and interior steel doors and frames shall be for painted finish. See Section 01004 INTERIOR DESIGN REQUIREMENTS and Paragraph 1.7.11 of this Section.

Interior wood doors shall be for transparent stained finish. See Section 01004 INTERIOR DESIGN REQUIREMENTS and Paragraph 1.7.11 of this Section.

Glazing at exterior doors and all window glazing to be standard bronze tinted glass. Reflective finish not required.

Glazing at interior doors and frames shall be clear glass.

1.7.5 Hardware; Builder's (General Purpose)

Contractor shall coordinate specific hardware requirements with Base personnel.

Provide all hardware in heavy-duty commercial grade.

1.7.5.1 Hinges

All hinges shall be Grade 1 full mortise type hinges with anti-friction bearings. Doors up to 82 inches shall be equipped with a minimum of 3 hinges per door for a single type door. Extra heavy doors or tall doors shall have additional or special-type hinges provided as recommended by the door manufacturer. Hinges shall be fully recessed and fit flush within designated frame slots, and shall be recessed into door edge for flush fit.

1.7.5.2 Locks and Latches

All exterior and interior door locks and latchsets shall be Grade 1 full mortise type accommodating Best hardware, 7-pin premium locksets to match existing locks and latchsets on Base and to meet Base standards.

Exit devices shall be equal to Precision Model 20C/V39L with concealed rods. Exit devices shall accommodate Best cores, as described above.

1.7.5.3 Lock Cylinders

Lock cylinders shall not be less than seven pins.

Cylinders shall have keyed removable type cores, and shall be Best Premium, 7 pin. Disassembly of knobs, levers and locksets shall not be required to remove core from lockset. All locksets and exit devices shall accept the interchangeable cores. Provide spare cores, in minimum quantity of 1 percent of total cores for project, but not less than 2 total.

Cores shall be delivered to the 28 CES Structures shop shipped direct from Best.

1.7.5.4 Lock Trim

The doors shall have lever handles with all exterior doors in rooms other than mechanical/electrical/comm. rooms having panic type hardware. Contractor shall coordinate specific requirements with Base personnel.

1.7.5.5 Keying

Locks and special key hardware shall be keyed to the Ellsworth Air Force Base master key system or equal compatible lock system with interchangeable cores. The existing 7-pin key system is "Best" brand. A grand master keying system shall be provided. All of the keys shall be keyed in one series, except the mechanical, electrical and communication equipment rooms. Locks for all mechanical, electrical, and communications equipment rooms shall be keyed to the existing Base utility keying system. Contractor shall coordinate keying system with Contracting Officer and the user.

Provide a total of two (2) key blanks for each core in the building, along with eight (8) blank master keys.

1.7.5.6 Door Closing Devices

Surface type overhead door closers shall be Grade 1, standard cover closers to meet Base standards; Corbin Russwin brand preferred. Closers shall be size VI. Door opening and closing actions shall comply with ADA/UFAS.

1.7.5.7 Auxiliary Hardware

Cipher locks shall be mechanical type (or self-generating electrical type), surface-mount, stainless steel finish, key override.

Combinated security locks shall be Mas-Hamilton CDX-09.

Door floor stop and holds shall match Base standards.

Door wall stops shall match Base standards.

Overhead door stops shall match Base standards.

Automatic door bottoms shall be mortise type.

Lever extension flush bolts shall match Base standards.

Metal thresholds shall be type best suited for door function.

Kick plates shall match Base standards.

All exterior doors shall have aluminum drop type weather seals.

All rated doors shall have compression type seal gasketing.

Balanced magnetic switches shall be Sonitrol BMS, CSL #AC486C. Wiring used in installing these devices shall have no splices from the switches to the panel, and wiring shall be labeled at the panel as to which door they are connected to. Contractor shall install the switches and the wiring to the panel; panel connections shall be by Others (N.I.C.).

1.7.5.8 Finishes

Door hardware finish shall match existing base hardware, as required by Ellsworth AFB, finish to match Base standards. Coordinate with Base locksmith.

1.7.5.9 Hardware Requirements

Door hardware in fire rated walls shall comply with NFPA and other applicable criteria.

1.7.5.10 Hardware Sets

The following hardware sets listed are the minimum functional hardware requirements for each door type. Additional hardware may be required for each door type other than listed below.

a. Steel: Single exterior mechanical, electrical, and storage room doors

Grade 1 hinges with non-removeable pins
Mortise lockset (self-locking)
Cipher lock at L.S. Storage Room 111 only
Overhead closer
Wall, floor or overhead stop
Weatherstripping
Rain drip
Threshold
Interior kickplate

b. Steel: Single exterior acoustical door at Auditorium 224

Grade 1 hinges with non-removeable pins
Exit device hardware (no outside trim)
Overhead closer
Overhead stop
Sound seals and automatic door bottom
Weatherstripping
Rain drip
Threshold
Balanced magnetic switch

c. Steel: Double exterior mechanical, electrical and communications room doors

Grade 1 hinges with non-removeable pins
Mortise lockset hardware (self locking capabilities on active leaf)
Overhead closer (active leaf)
Lever extension flush bolts (inactive leaf)
Wall, floor and overhead stops
Weatherstripping
Rain drip

Threshold
Interior kickplates

d. Storefront: Exterior doors

ADA/UFAS electronic pad opening devices where shown on the Drawings
Automatic operators with motion-sensing devices and other associated hardware (at Vestibule 136 doors only)
Modern design push - pull sets
Overhead closer
Off-set pivots with non-removeable pins
Weatherstripping
Threshold
Cylinders

e. Storefront: Interior doors

ADA/UFAS electronic pad opening devices where shown on the Drawings
Modern design push - pull sets
Automatic operators with motion-sensing devices and other associated hardware (at Vestibule 136 doors only)
Overhead closer
Off-set pivots

f. Solid Core Wood: Low-to Medium Security Interior Doors
(Single doors used in individual offices, office suites, janitor's closets, and storage rooms).

Grade 1 hinges
Mortise lockset (key locking capabilities, no self-locking hardware)
Overhead closer
Wall, floor or overhead stop
Interior kickplate
Light seal gasketing and automatic door bottom at Room 112

g. Solid Core Wood: High-Security Interior Doors at L.S. Training 104 and Hall 105 (doors to corridor)

Grade 1 hinges
Cipher lock
Overhead closer
Wall stop
Interior kickplate

h. Solid Core Wood: High-Security Interior Doors at Scheduling Rooms 209, 212 and 213, and Comm. Sec. Storage 159

Grade 1 hinges with non-removeable pins
Combinated security lock
Mortise lockset
Overhead closer
Wall or overhead stop
Interior kickplate

i. Solid Core Wood: Single High-Sound Rating Interior Doors at east end of Passage 223 and southwest corner of Mission Debrief 230.

Grade 1 hinges with non-removeable pins
Combinated security lock

Cipher lock
Overhead closer
Sound seals and automatic door bottom
Wall stop
Interior kickplate

j. Solid Core Wood: Double High-Sound Rating Interior Doors at Auditorium 224.

Grade 1 hinges with non-removeable pins
Exit device hardware with no corridor side trim
Overhead closers
Sound seals and automatic door bottom
Removeable mullion
Overhead stop and holds
Interior kickplates
Balanced magnetic switches

k. Solid Core Wood with Steel Face: Arms Room 107 Doors

Grade 1 hinges with non-removeable pins
Mortise lockset (self-locking)
Hasp and padlock per AFI 31-101 (Attachment 8)
Overhead closer
Wall Stop
Interior kickplate
Balanced magnetic switch

1.7.5.11 Key Storage Cabinets

Two recessed wall mounted key cabinets shall be provided, one in Room 259 and one in building manager's work area as directed by the Contracting Officer, and shall contain all keys and key blanks for all areas of this facility. Cabinet shall have the capacity to store a minimum of two keys for each room on an individual key hook. Key hooks shall be mounted on panels with sufficient distance between hooks that will allow easy identification, and so keys can be easily moved onto and off of the hooks. Cabinet key panels shall be readily removable and capable of insertion of additional panels for expansion needs. Key cabinet shall have key locking capabilities. Cabinet door shall be a full height piano hinge type.

1.7.6 Windows

Window frames and doors shall comply with blast-resistant criteria, as shown in Attachment 7.

1.7.6.1 Exterior Aluminum Storefront and Aluminum Windows

Storefront and window manufacturers shall specialize in the design and manufacture of these products, and shall have a minimum of 10 years of documented successful experience. Exposed interior and exterior surfaces of aluminum shall be finished conforming to AA DAF-45: Architectural Class I, AA-M10-C22-A44, mill-finish color anodic coating, 0.7 mil or thicker.

Construction shall consist of an aluminum frame with a continuous thermal break. Performance rating of these windows shall be HC 65 or greater in accordance with performance rating testing with AAMA 101. Storefront and windows shall include insulated glazing units as specified below.

Storefront doors shall be full-glazed medium stile with modern design stainless steel push-pull sets. Provide electrically-operated doors for handicapped access as shown on the Drawings. Finish shall match storefront system.

1.7.7 Glass and Glazing

Glazing at exterior doors and all window glazing shall be of thickness and type as described in blast-resistant criteria, as shown in Attachment 7, and shall be standard bronze tinted. All exterior windows shall have insulated laminated glass.

1.7.7.1 Insulated Glass

Insulated glass shall be used for all exterior window and door applications and shall be minimum 1" thick. Glass panel shall consist of two glass panes separated by a ½" air space and hermetically sealed. The use of capillary and/or breathing tubes in the manufacturing process is not permitted. All insulated glazing units shall be standard bronze tinted. On all insulated exterior glazed openings in windows and doors, regardless of location, laminated glass shall be used for the interior pane.

1.7.7.2 Laminated Glass

Manufacturer shall have specialized in the manufacturing of these material products for a minimum of 10 years of documented experience.

Installer shall have a minimum of 5 years of documented experience.

Laminated glass shall be Class 1- standard bronze tint, Condition A uncoated surface, Quality q3- glazing select. Except as noted below, the laminated glass units shall consist of two nominal 1/8-inch Type I transparent glass panes bonded together with a minimum of a 0.030-inch polyvinyl-butylal (PVB) interlayer for a total thickness of 1/4". Thicker laminated glass units shall be used at certain exterior window units, when required to meet blast-resistant criteria shown in Attachment 7.

1.7.8 Gypsum Wallboard Systems

All gypsum wallboard shall be a minimum of 5/8 inch thick. Predecorated gypsum wallboard is not acceptable.

All metal studs for typical walls shall be minimum 3-5/8 inch wide, and shall be placed at a maximum distance 16 inches on-center.

Gypsum wallboard located in public corridors and other common areas open to public access and subject to possible abuse shall be abuse-resistant type gypsum wallboard, providing a heavy-duty upgrade over standard gypsum wallboard. The system components shall provide penetration resistance and reduce surface damage to the gypsum wallboard. This system shall include the following components: 5/8 inch Type FRX engineered gypsum fiber panel with mesh reinforcement on back, setting-type joint compound, paper tape, and a minimum 3-5/8 inch 20 gauge metal stud framing spaced 16 inches on center. Gypsum wallboard shall have a Level 4 finish in accordance with GA-214 in all areas. Gypsum wallboard shall be fire-taped above ceiling levels.

For finishes and colors at gypsum wallboard, refer to Section 01004 INTERIOR DESIGN REQUIREMENTS.

1.7.9 Tile

Tile finishes are described in Section 01004 INTERIOR DESIGN REQUIREMENTS. Finish locations are identified in the Room Finish Schedule and associated drawings.

1.7.10 Ceilings

1.7.10.1 Gypsum Board Ceiling.

All gypsum wallboard ceilings shall be a minimum of 5/8 inch thick.

For finishes and colors at gypsum wallboard, refer to Section 01004 - INTERIOR DESIGN REQUIREMENTS. Finish location is identified in the Room Material and Finish Legend.

1.7.10.2 Acoustical Tile Ceiling

Acoustical tile ceiling finishes are described in Section 01004 - INTERIOR DESIGN REQUIREMENTS. Finish location is identified in the Room Material and Finish Legend.

1.7.11 Exterior Painting, General

Exterior paint systems shall comply with CEGS Section 09900 Paints and Coatings.

1.7.11.1 Aliphatic Acrylic Polyurethane

The aliphatic acrylic polyurethane finish coat (P-6) shall contain a sparkle aluminum pigment to create a glossy metallic aesthetic finish. The coating shall be highly durable, resistant to abrasion, wet conditions and weathering. The finish shall contain UV absorbers for extended color and gloss retention. Manufacturer's recommended primers and application method must be used.

1.7.11.2 Surfaces to Receive Paint

- Steel doors and frames (paint to match light-colored CMU)
- Steel pipe bollards (paint to match dark brown roof)
- Steel bike racks (paint to match dark brown roof)
- Steel trellises (paint to match light-colored CMU)
- Steel columns and windowwall framing structure at Lobby area (P-6)
- Steel stair railings (paint to match dark brown roof)
- Steel louvers (paint to match color of adjacent CMU)
- Steel columns at entry canopies (paint to match light-colored CMU)
- Steel columns at covered parking canopy (paint to match dark brown roof)

1.7.11.3 Surfaces Not to be Painted

Surfaces in the following areas are not to be painted:

- Metal surfaces of aluminum, stainless steel, chromium plate, bronze, copper and similar finish materials.

- Surfaces of hardware, fittings, sprinkler heads, fire protection equipment and other factory finished items not requiring a painted

finish.

Glass and other finished surfaces.

Factory finished surfaces shall not be painted, unless specifically listed to receive paint.

1.7.12 Exterior Signage

Building mounted address and building title signage shall be cast aluminum material in a helvetica medium style, located on the building as shown on the drawings. Address signage shall be 8 inches tall, satin-finished brushed aluminum. Building address is 2037 Bergstrom Drive (all caps). Building title signage shall be of similar material, 10 inches tall; exact wording will be determined by the User; for bidding purposes, allow a total of 45 characters (all caps).

1.7.13 Toilet Partitions and Urinal Screens

Toilet enclosures shall conform to Federal Commercial Item Description CID A-A-60003, Type I, Style C, floor mounted, overhead braced. Coat hooks shall be provided at inside of each toilet partition door. Finish surface of panels shall be solid phenolic for maximum durability and vandal resistance. Urinal screens shall conform to Federal Commercial Item Description CID A-A-60003, Type III, Style A, wall mounted. Finish surface of screens shall be solid phenolic. Specify toilet partitions and urinal screens using UFGS Section 10153 TOILET PARTITIONS.

1.7.14 Toilet Accessories

1.7.14.1 Accessory Types

Provide one 18-gauge stainless steel, satin finish shelf with integral 4 mop holders and 5 hook brackets for each janitor closet.

Electric hand dryers shall be semi-recessed. Features of the dryer shall include a 360-degree rotating nozzle, minimum 75 watt motor, and push button motor switch. Dryer casing, nozzle and push button shall have a chrome-plated steel finish. Provide one dryer per restroom.

Paper towel dispenser / waste receptacles shall be stainless steel semi-recessed units supplying multi-fold paper towels. The cabinets shall have a concealed tumbler key lock. Units shall have a 12-14 gallon minimum removable molded plastic insert. Provide one paper towel dispenser / waste receptacle per restroom.

Soap dispensers shall be the surface-mounted liquid pump type with a minimum 1 quart capacity. Dispenser shall be mounted on the restroom mirror. Provide one soap dispenser for every two sinks.

Glass mirrors shall be frameless, jointless and full-wall coverage from edge-to-edge of the lavatory and from top-of-splash to 7'-0" above floor. In addition, each restroom shall be provided with one full-length stainless steel-framed wardrobe mirror.

Toilet tissue dispensers shall be the stainless steel surface-mounted jumbo-type that holds five standard size rolls. Provide one toilet tissue dispenser for each toilet.

Sanitary napkin disposals shall be stainless steel and shall be partition-mounted in each women's stall.

Grab bars shall be stainless steel and shall be partition mounted with a non-slip gripping surface. Locations shall be as indicated on the drawings.

Towel bars shall be stainless steel and shall be surface-mounted next to each shower stall.

Robe hooks shall be stainless steel and shall be surface-mounted next to each shower stall.

1.7.14.2 Toilet Accessory Finishes

Finishes shall match stainless steel, Type 304.

1.7.15 Miscellaneous Equipment

1.7.15.1 Fire Extinguisher Cabinets

Fire extinguisher cabinets shall be fully recessed type with a flat metal door. Clear plastic bubble type door fronts are acceptable. Fire extinguisher cabinets shall be located in accordance with NFPA 10. Color of the cabinets shall be painted to match the color of the adjacent wall. Cabinets shall be sized to receive 15 pound Type ABC fire extinguishers. Fire extinguishers shall be provided by EAFB Fire Department(N.I.C.).

1.7.15.2 TV and Projection Equipment Mounting Brackets

Mounting brackets for televisions and project equipment shall be wall and ceiling-mounted prefabricated metal brackets, at locations shown on the Drawings. Coordinate bracket sizes with User-provided TV's, and projection equipment provided under the O&M-Funded Options.

1.7.15.3 Motorized Projection Screens

Motorized projection screens shall be sized and located as shown on the Drawings, and shall be concealed above ceilings. Screens shall include control switches. Screens shall be equal to Signature Series by Draper.

1.7.15.4 Bridge Crane/Rail System

Bridge crane/rail system shall be as shown in Mobility Storage Room 144 on the Drawings (plans and sections), and shall include the following features:

- Capacity: 10,000 pounds
- Type: Single girder, top running
- Bridge motors: dual, single speed, 80 fpm
- Trolley motor: single, variable speed, 60 fpm max.
- Hoist motor: single, single speed, 14 fpm
- Girder span: 30 feet
- Maximum wheel load: 8,100 pounds/wheel
- Upper and lower limit switches
- Manufacturer/model DL Hoist (Detroit Hoists) or equal
- Clearance requirements: no radiant heating system components (if used) shall be located directly above runway beams; must be below the level of runway beams

1.7.16 Casework and Architectural Woodwork

1.7.16.1 Cabinets

Information regarding cabinets and countertops shall be referenced to UFGS Section 12320A Cabinets and Countertops for design criteria and minimum quality requirements. See the drawings for design intent of cabinets and countertops. See Section 01004 INTERIOR DESIGN REQUIREMENTS FOR PLASTIC LAMINATE COLOR SELECTIONS.

1.7.16.2 Architectural Woodwork

Architectural woodwork throughout shall conform to AWI Section 400, Custom Grade, all locations. Provide wood doors, wood frames, wood trim, and chair rails as required elsewhere in this document and on the drawings.

1.7.16.3 Restroom Millwork

Countertops shall be solid polymer with 4" solid polymer back and side splashes. Sinks shall be of solid polymer construction. Countertops shall be mounted at 35" above finished floor to comply with ADA/UFAS. Seams shall not be visible and shall be formed and dressed per manufacturer's instructions. Drain and supply lines shall be insulated with molded protective covers. See Section 01004 INTERIOR DESIGN REQUIREMENTS for solid polymer color selections.

Countertops shall be able to withstand a 1100# live load at midspan. Provide continuous steel sections below countertop front behind fascia and securely anchored to end walls for support; intermediate floor supports are not allowed.

1.7.16.4 Other Millwork

Base cabinets shall be 36" high to the plastic laminate countertop and be provided with a drawer at top and swing door at bottom. Depth shall be 24". Provide 4" plastic laminate backsplash and sidesplashes. Provide an oak edge trim on all countertop fronts. Drawers shall have ball bearing slides; drawer fronts shall be both glued and screwed. Provide frameless concealed hinges (European type). Pulls shall be recessed design. Provide interior adjustable shelves. Base cabinets shall be complete with toekick and rubber base. Interior finish shall be white melamine.

Wall cabinets shall be mounted at heights shown on drawings, and securely fastened to the wall. Size shall be 30" high and 12" deep. Wall cabinets shall be provided with swing doors and an interior adjustable shelf. Interior finish shall be white melamine. Hinges and pulls shall match base cabinets.

Lighted display cases shall be 24" deep, width to match full wall opening as shown on plans, and height to match adjacent door head. Lighting shall be recessed into GWB soffit. Cases shall have full clear tempered glass sliding doors with locks. Exposed framing and trim shall be red oak finished to match personnel doors. West case shall be provided with six adjustable glass shelves on brushed chrome brackets and standards. East case shall be provided with fabric covered bulletin board.

1.7.16.5 Window Sills

Window sills shall be constructed of solid polymer material.

1.7.16.6 Doors

Doors shall be faced and self-edged with plastic laminate. Exposed exterior wood trim shall be hardwood.

1.7.16.7 Drawers

Drawers will have side guides with an automatic stop feature. Sides and bottom will be constructed of hardwood, minimum 5/8" particle board, and/or plywood. Drawers fronts should be removable and replaceable. All drawer joints must be dove-tailed.

1.7.16.8 Countertops

Cabinets and countertops shall comply with AWI Section 400, Custom Grade. Countertops shall be covered with plastic laminate and constructed of particleboard. Provide backsplashes and self-edge all exposed edges.

Plastic laminate shall comply with the requirements of NEMA LD3 1995. Countertop edges shall be a fully formed type unit with shaped edges and a separate backsplash.

1.7.16.9 Cabinet Hardware Finishes

Finishes shall match stainless steel, Type 304.

1.7.17 Elevators

Elevator shall be 2,500 lb. capacity, (100 fpm) speed, holed or holeless, three-stop hydraulic unit with elevator equipment room located adjacent to the shaft, as shown on the Drawings. Frames, doors and all trim shall be satin stainless steel. Floor finish shall be carpet to match corridor, wall finishes shall be plastic laminate (Formica 7265-58 Sand Stone), ceiling design shall be from manufacturer's standard offering. Elevator shall fully comply with ADA, UFAS and all other applicable codes.

Door shall be side-opening of minimum size 36" wide by 84" high. Minimum cab size clear dimensions shall be 6'-8" wide by 4'-4" deep by 8' high. Coordinate required overhead clearances. Provide pit, ladder and sump.

-- End of Section --

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SECTION 01004

INTERIOR DESIGN REQUIREMENTS

PART 1 INTERIOR DESIGN REQUIREMENTS

1.1 REQUIRED DESIGN CRITERIA

The publications listed below shall be utilized for design of this facility to the extent referenced. UFGS guide specifications shall be updated to reflect the dates of these publications as applicable.

Some of these publications may be available to download in Acrobat PDF or MS Word file format at the following internet addresses:

<http://www.afcesa.af.mil/publications/ETLs/default/html>

<http://www.access.gpo.gov>

<http://www.access-board.gov>

<http://store.mil-standards.com>

<http://www.hnd.usace.army.mil/techinfo/index.asp>

<http://www.afcesa.af.mil/default.htm>

<http://www.e-publishing.af.mil>

<http://www.ccb.org/ufgs/ufgstoc.htm>

<http://www.dtic.mil>

AIR COMBAT COMMAND (ACC)

ACC (ACC Architectural and Interior Design Standards, (June 2001)
(Attachment 3)

ELLSWORTH AIR FORCE BASE

Ellsworth AFB Design Computability Standards (1998) (Attachment 4)

Ellsworth AFB Standards for Design (March 2001) (Attachment 5)

UNITED STATES AIR FORCE

AF ETL 03-3 Air Force Carpet Standard (16 April 2003)

CODE OF FEDERAL REGULATIONS (CFR)

36 CFR 1191 Americans with Disabilities Act (ADA)
Accessibility Guidelines for Buildings
and Facilities

16 CFR 1630 Standard for the Surface Flammability of
Carpet and Rugs

FEDERAL REGISTER

49 FR 31528 Uniform Federal Accessibility Standards

41 CFR Ch. 101 Uniform Federal Accessibility Standards

GYPSUM ASSOCIATION (GA)

GA-214 Recommended Levels of Gypsum Board Finish

UNIFIED FACILITIES CRITERIA (UFC)
UFC 3-120-01 Air Force Sign Standard (Feb 2003)

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)
NFPA 101 Life Safety Code (2000 Edition)

Other publications referenced shall comply with the latest edition of the UFGS guide specifications:

AMERICAN ASSOCIATION OF TEXTILE CHEMISTS AND COLORISTS (AATCC)
AATCC 134 Electrostatic Propensity of Carpets

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)
ASTM B 221 Aluminum Alloy Extruded Bar, Rod, Wire,
Shape, Tube

ASTM C 423

Sound Absorption and Sound Absorption
Coefficients by the Reverberation Room
Method

ASTM F150-98 Standard Test Method for Electrical
Resistance of Conductive and Static
Dissipative Resilient Flooring

ASTM C 635 Manufacture, Performance, and Testing of
Metal Suspension Systems for Acoustical
Tile and Lay-In Panel Ceilings

ASTM D-1308-02 (01-Jan-2002) Standard Test Method for
Effect of Household Chemicals on Clear and
Pigmented Organic Finishes

ASTM D 1335 (1998) Tuft Bind of Pile Floor Coverings
Room Method

ASTM D 2047 (1999) Static Coefficient of Friction of Polish-Coated Floor Surfaces as Measured by the James Machine

ASTM E 84 (2000) Standard Test Method for Surface Burning Characteristics of Building Materials

ASTM E 648 (2000) Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source

ASTM E 1264 Standard Classification for Acoustical
Ceiling Products

ASTM F 793

Standard Classification of Wallcovering by
Durability Characteristics

ASTM F 1066	(1999) Vinyl Composition Floor Tile
ASTM F 1344	Rubber Floor Tile
ASTM G 22	Determining Resistance of Plastics to Bacteria
ASTM 1860	Rubber Sheet Floor Covering with Backing
ASTM F 1700-99	Solid Vinyl Floor Tile
AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)	
ANSI A137.1	(1988) Ceramic Tile
TILE COUNCIL OF AMERICA (TCA)	
TCA Hdbk	Handbook for Ceramic Tile Installation
ELECTROSTATIC DISCHARGE ASSOCIATION (ESD)	
ESD STM 7.1-2001	Resistive Characterization of Materials - Floor Materials
FEDERAL STANDARDS (FED STD)	
FED STD 795	(April 1999) Uniform Federal Accessibility Standards
MISCELLANEOUS PUBLICATIONS	
ADA Architectural Design Checklist (Attachment 2)	

1.2 DESIGN CRITERIA

The technical specifications provided shall serve as the design standards established for this project. Design publications listed in each specification section shall be used as sources of criteria for design. The criteria from these sources may be supplemented, but not supplanted, by applicable criteria contained in nationally recognized codes, standards, and specifications.

1.3 INTERIOR FINISHES

1.3.1 Carpet, Carpet Tile, and Resilient Textile Flooring

Carpet shall be patterned for maximum soil-hiding properties. Patterns shall consist of tan, sage green, burgundy, dark blue and black. They shall be 100% continuous filament, yarn dyed, branded nylon, type 6,6, permanent stain resistant fiber, recyclable with a loop construction (CPT-1 thru CPT-13). Carpet CPT-20 shall be precision cut/loop construction.

Carpet walk-off tiles shall be 18"x18" tip sheared textured loop. They shall be yarn-dyed, branded nylon, type 6,6 with nylon 6,6 scraper yarn and permanent stain resistance (CPT-18 and CPT-19).

Resilient textile flooring shall be 19.68" x 19.68" modules, branded nylon, type 6,6. They shall meet impact noise ISO 140.8, noise absorption ISO-354 (CPT-14 thru CPT-17).

All of the above flooring products shall have a lifetime warranty against 10% loss of face fiber, edge ravel, delamination, static and tuft bind. Carpets shall comply with ETL 03-3.

1.3.1.1 Pile Type

Pile type shall be loop with the following minimum criteria: 1/8-inch gauge, 30 ounces per square yard minimum yarn weight, 6000 pile density, .174 inches pile height and 87 ounces per yardweight (CPT-1 thru CPT-13 and CPT-20).

Carpet tile pile type shall be a tip sheared textured loop, 5/32 gauge, 38 oz. and 215 oz. yard weight (CPT-18 and CPT-19).

Resilient textile flooring shall have a fiber density index of 60,000,000 per sq. yd. (CPT-14 thru CPT-17).

1.3.1.2 Carpet Backing

Broadloom carpet shall have primary and secondary backing of a 100% woven synthetic (polypropylene) and a moisture barrier (CPT-1 thru CPT-13 and CPT-20).

Carpet tile shall have an integrated cushion thermobond backing (CPT-18 and CPT-19).

Resilient textile flooring shall have a compact vinyl, fiberglass stabilized backing (CPT-14 thru CPT-17).

1.3.1.3 Static Control

Static electricity build-up of the carpet shall be permanently less than 3.0 kilovolts at 70 degrees F and 20 percent relative humidity as determined by the American Association of Textile Chemists and Colorists (AATCC 134 Test Method), Electrostatic Propensity of Carpets.

1.3.1.4 Flammability and Critical Radiant Flux Requirements

Carpet shall comply with ETL 03-3. Carpet in corridors and exits shall have a minimum average critical radiant flux of 0.45 watts per square centimeter when tested in accordance with ASTM E 648.

1.3.1.5 Tuft Bind

Tuft bind force required to pull a tuft or loop free from carpet backing shall be a minimum 20 pounds-force (89 N) average force for loop pile when tested in accordance with ASTM D 1335. Lifetime warranty from the carpet manufacturer against edge ravel, delamination and tuft bind is required.

1.3.1.6 Installation

Carpet and carpet tiles shall be installed direct glue down. In addition, manufacturer's recommended equipment, adhesive and related items be used. Adhesives and concrete primers shall be waterproof, nonflammable, meet local air-quality standards, and be as recommended by the carpet manufacturer. Installation and floor preparation must meet manufacturer's recommendations to insure lifetime warranties.

1.3.1.7 Extra Material

Extra material from same dye lot shall be provided for future maintenance. A maximum of 5 percent of total square yards of each carpet type, pattern, and color shall be provided.

1.3.2 Ceramic Tile

Ceramic tile shall conform to ANSI A137.1, heavy commercial grade only. Floor tile shall conform to ASTM D 2047 for wet and dry slip resistance. Ceramic floor tile and trim shall be equal to Dal Tile ceramic floor tile for commercial use.

Porcelain tile shall conform to Crossville ceramic floor tile for commercial use.

Thin set method (TCA Method F113) shall be used for all floors that will receive ceramic or porcelain tile, except for all shower and drying areas, which shall utilize the thick set method (TCA Method F112).

Toilet rooms shall receive full-height ceramic tile walls. Walls with ceramic tile finishes on steel stud partitions shall have cement backer board as a substrate for tile.

Ceramic tile shall conform to ANSI A137.1, moderate to heavy grade only. Wall tile in restrooms shall be installed in accordance with TCA method W244.

1.3.3 Vinyl Tile

Solid vinyl floor tile shall conform to ASTM F 1700-99 solid vinyl floor tile class III printed film vinyl tile Type A smooth surface and Type B embossed surface. The wear layer shall be clear, semi-rigid PVC, .020" thickness. The backing shall be a three-ply fused backing system using recycled PVC.

1.3.4 Vinyl Composition Tile

Vinyl composite tile shall comply with ASTM F 1066, Class 2 (through pattern tile), Composition 1, asbestos free. Color and pattern shall be distributed uniformly throughout the tile. Tile shall be no less than 1/8 inch thick and 12 inches by 12 inches in size.

1.3.5 Resilient Base

All resilient base shall be coved style 4 inch, minimum 1/8 inch thick roll goods. All corners shall be job-formed.

Vinyl coved base shall be used with all carpet, vinyl tile, and VCT.

Rubber coved base shall be used with all rubber flooring and concrete.

1.3.6 Smooth Surface Rubber Sheet Flooring

The smooth surface rubber sheet flooring shall be a three layer construction consisting of a rubber wear layer, a performance core of 60 shore A rubber and a polyester backing. All components of the construction shall be thoroughly vulcanized to prevent delamination. The overall thickness shall be .079" and 55" wide. The rubber sheet flooring shall conform to ASTM-1860. The rubber sheet flooring shall be installed using manufacturer's recommended adhesives and installation instructions.

1.3.7 Static Control Flooring

Electrostatic discharge (ESD) control flooring shall be 24" x 24", 1/8" gauge, static dissipative solid vinyl tile. ESD flooring shall meet or exceed ASTM F150, ESD STM 7.1-2001, and ASTM F 1700-99. The flooring system shall consist of ESD vinyl tile, conductive adhesive, and copper foil for common ground. A lifetime conductivity warranty and 10 year wear warranty shall be provided.

1.3.8 Rubber Flooring and Stair Treads

Rubber flooring and stair treads shall conform to ASTM F 1344 Class 1 homogeneous construction, Type A. Surface shall be slip-resistant. Hammered profile shall be low, and overall thickness shall be 1/8". Stair nosing shall have an embedded abrasive strip for slip resistance. A one piece tread/riser design is required. Paint stringer angles on both the wall and banister sides and landing trim to match rubber floor color.

1.3.9 Vinyl Wallcovering

Vinyl wallcovering shall be a vinyl coated woven or nonwoven fabric and shall conform to ASTM F 793, Category V Type II. Location of vinyl wallcovering is indicated on the drawings.

1.3.9.1 Extra Material

Extra material from same dye lot shall be provided for future maintenance. A minimum of 5 percent of total yardage of each color and pattern shall be provided.

1.3.10 Interior Painting, General

Interior paint systems shall comply with CEGS Section 09900 PAINTS AND COATINGS.

1.3.10.1 Aliphatic Acrylic Polyurethane

The aliphatic acrylic polyurethane finish coat (P-6) shall contain a sparkle aluminum pigment to create a glossy metallic aesthetic finish. The coating shall be highly durable, resistant to abrasion, wet conditions and weathering. The finish shall contain UV absorbers for extended color and gloss retention. Manufacturer's recommended application method and primers must be used.

1.3.10.2 Surfaces to Receive Stain or Paint

An egg-shell latex paint shall be used on all exposed wall and ceiling surfaces.

Exposed masonry walls to be painted shall receive a latex filler coat prior to paint application.

Exposed-to-view steel roof deck and structural elements, handrails and balusters shall receive an egg-shell enamel paint finish.

Exposed wood doors, frames and related trim shall receive a transparent stain finish; color shall match sample provided by the Contracting Officer.

1.3.10.3 Surfaces Not to be Painted

Surfaces in the following areas shall not be painted:

Concrete or concrete masonry units not exposed to view.

Concrete floors - All concrete floors shall be sealed.

Metal surfaces of aluminum, stainless steel, chromium plate, bronze, copper and similarly finished materials.

Jacketing over pipe insulation in unexposed locations that do not require color coding.

Surfaces of hardware, fittings, sprinkler heads, fire protection equipment and other factory finished items not requiring a painted finish.

Glass, wall covering and other finished surfaces.

U.L., Factory Mutual, or similar labels indicating material compliance with building standards.

1.3.11 Corner Guards

Corner guards shall be surface mounted guards consisting of a continuous regrind retainer with snap on vinyl acrylic cover, matching end caps and 2" legs. The vinyl acrylic cover shall be an extruded high impact material with a pebble grain texture. Chemical and stain resistance should meet ASTM D-1308. Regrind retainers shall be 100% recycled vinyl acrylic compound. All fasteners shall be provided by manufacturer.

1.3.12 Acoustical Ceilings

Lay in panels shall be a 24 inch by 24 inch by 5/8 inch thick, square edge tile. Grid shall be a 15/16 inch exposed tee and shall be fire resistive. Tile shall have a noise reduction coefficient rating of at least 0.55 and a sound transmission class rating of 35 - 39. Material for tile shall be a mineral fiber form and grid shall be of galvanized steel. Finish and texture shall be factory applied. For flame spread and fire resistance, the acoustical tile shall be 20-minute fire-rated (UL Labeled) and shall have rated holddown clips. Acoustical ceiling tile shall be coordinated with Base personnel for specific base standard requirements.

Acoustical ceiling system shall be a 2' x 2' exposed grid type. Acoustical panels shall have a tegular edge. Acoustical ceiling units shall conform to ASTM E 1264, Class A, Type III (mineral fiber with painted finish). Suspension system shall have a standard width flange, and shall conform to ASTM C 635 for intermediate-duty systems.

1.3.12.1 Extra Material

Extra material shall be provided for future maintenance. Provide government with 1 percent of gross area installed, maximum of two cases, of each type of ceiling panel used.

1.3.13 Interior Signage

Interior signage shall be included for all offices, conference, training, planning and briefing rooms, restrooms, storage and utility rooms in the

building. Message content and room numbering system shall be coordinated with the user. Signage for restrooms and private offices shall match ASI Series 20. All other signage shall match ASI Infinity Series; replacement strips shall be easily accomplished by maintenance personnel without requiring removal of sign frame. See Attachment 11 for additional information.

Signage shall conform to UFC 3-120-01, to 36 CFR 1191 Americans with Disabilities Act (ADA), and to FED-STD 795 Uniform Federal Accessibility Standards (UFAS), whichever is the most stringent.

1.3.14 Installation of Finishes

All finishes shall be installed as per manufacturer's written instructions, recommendations on quality assurance (applicator qualifications), delivery, storage, handling, project conditions, preparation, workmanship, adjustments, protection and clean-up.

1.3.15 Furniture Layout

A furniture footprint shall be provided to include all furniture and equipment in project. Furniture layout shall be functional and coordinated with the building design to assure that the locations of electrical and communication outlets and lighting within the building are appropriate. The furniture layout shall also be coordinated with other building features such as architectural elements, thermostats, lighting, location of TV sets, etc. The furniture layout shall conform to requirements specified in 36 CFR 1191, FED-STD. 795, and NFPA 101.

1.4 COLOR, TEXTURE, AND PATTERN

The color, texture, and pattern selections for the finishes of the building shall provide an aesthetically pleasing, comfortable, easily maintainable and functional environment for the occupants. Floor patterns, wall patterns and laminate locations are indicated on the floor finish plan and elevations. Color of ceramic tile grout shall be a medium range color to help hide soiling. Plastic laminates shall have patterns that are mottled, flecked or speckled with a mar-resistant finish such as Formica's 'Crystal' finish. Coordination of building colors, textures and finishes is a requirement of this RFP in order to assure a cohesive design.

Interior finishes shall be equal in appearance, quality and construction to the following:

Paint

P-1: ICI

Color: 554 Brazil Nut

P-2: ICI

Color: 88 Wild Cranberry

P-3: Sherwin Williams

Color: SW6166 Eclipse

P-4: Sherwin Williams

Color: SW6055 Fiery Brown (for hollow metal doors and frames)

P-5: ICI

Color: 421 Onionskin Tan

P-6: Tnemec Enduralume 1077

Color: IC 1077-01MT Bright Aluminum (for main lobby walls, ceilings, steel columns, and handrails)

Vinyl Wallcovering
VWC-1: National Wallcovering Colour and Design
Pattern #: CD-UC2-04
VWC-2: Koroseal
Pattern Name: Esquire
Pattern #: E521-30
Color: Straw
VWC-3: Koroseal
Pattern Name: Esquire
Pattern #: E521-87
Color: Safari
VWC-4: National Wallcovering Syphony
Pattern #: SSP41
VWC-5: Koroseal
Pattern Name: Gridlock
Pattern #: G521-81
Color: Overpass
VWC-6: National Wallcovering Colour and Design
Pattern Name: Bhalla
Pattern #: CD2-BLL-15
Color: Tarragon
VWC-7: National Wallcovering Colour and Design
Pattern #: CD-UC2-09
VWC-8: JM Lynne Wallcovering
Pattern Name: San Andreas
Pattern #: SP-11-40
Color: Tourmaline

Wood Finish - Stain to match mahogany sample provided by Contracting Officer

Corner Guards - 4' high
CG: C/S Acrovyn
Style: SSM-20
Color: 479 Cappuccino

Carpet
CPT-1: Lees
Pattern Name: Basare
Pattern #: DW686
Color: 233 Moccasin Brown
CPT-2: Lees
Pattern Name: Bottega
Pattern #: DV256
Color: 233 Moccasin Brown
CPT-3: Lees
Pattern Name: Bajio
Pattern #: DA466
Color: 233 Moccasin Brown
CPT-4: Lees
Pattern Name: Thought Patterns
Pattern #: T-12095-TB (DY 356)
Color: 233 Moccasin Brown
CPT-5: Lee's
Pattern Name: Bello
Pattern #: D7006
Color: 233 Moccasin Brown
CPT-6: Lees
Pattern Name: Thought Patterns

Pattern #: T-12088-TB (DY 516)
Color: 233 Moccasin Brown
CPT-7: Lees
Pattern Name: Thought Patterns
Pattern #: T-12092-TB (DY 646)
Color: 233 Moccasin Brown
CPT-8: Lees
Pattern Name: Thought Patterns
Pattern #: T-12089-TB (DY 606)
Color: 233 Moccasin Brown
CPT-9: Lees
Pattern Name: Thought Patterns
Pattern #: TB-12094-TB (DO366)
Color: 233 Moccasin Brown
CPT-10: Lees
Pattern Name: Wayfinder
Pattern #: D7689
Color: 555 Garneta
CPT-11: Design Weave
Pattern Name: Florin
Pattern #: Z6314
Color: 448 Arabian Night
CPT-12: Design Weave
Pattern Name: Florin
Pattern #: Z6314
Color: 724 Outrigger
CPT-13: Design Weave
Pattern Name: Florin
Pattern #: Z6314
Color: 337 Spanish Olive
CPT-14: Lees Neofloor
Pattern Name: Integrity
Pattern #: N500F
Color: 009 Stone Grey
CPT-15: Lees Neofloor
Pattern Name: Integrity
Pattern #: N500F
Color: 005 Capri
CPT-16: Lees Neofloor
Pattern Name: Integrity
Pattern #: N500F
Color: 012 Burnt Brick
CPT-17: Lees Neofloor
Pattern Name: Integrity
Pattern #: N500F
Color: 001 Leaf Green
CPT-18: Lees
Pattern Name: First Step
Pattern #: L8512
Color: 524 Stepping Stone
CPT-19: Lees
Pattern Name: Step Up
Pattern #: DD762
Color: 524 Sundance
CPT-20: Bentley
Pattern Name: Rhythm and Blues
Pattern #: 8RB3406300
Color: Big Daddy 887083

Vinyl Base
VB-1
Johnsonite
150 Wetlands

Rubber Base
RB-2
Johnsonite
63 Burnt Unber

Vinyl Composition Tile
VCT-1: Mannington
Pattern: Brushworks
Color: 707Canvas

Vinyl Tile
VT-2: Toli
Pattern: Lightstone
Pattern #:8335
VT-3: Toli
Pattern: Lightstone
Pattern #: 8333
VT-4: Toli
Pattern: Lightstone
Pattern #: 2813
VT-5: Flexco
Pattern: ESD Control
Pattern Name: DISS 43
Color: Ivory/Buckskin

Smooth Surface Rubber Sheet Flooring
RB-1: Johnsonite
Pattern Name: Fountain
Pattern Colorway: FTN-456
Color Name: Irish Cream
Field: Sage

Rubber Flooring
RB-2: Flexco
Pattern Name: Spextones
Color Name: Charcoal
Color #: 03
Finish: Hammered

Stair Treads
RB-3: Flexco
Pattern Name: Flextones
Color Name: Charcoal
Color #: 03
Style #: 1775
Finish: Hammered

Ceramic/Porcelain Tile
CT-1: Crossville
Pattern: Pompeii
Pattern #: VS54 Apollo Bronze
Dimensions: See drawing
CT-2: Crossville
Pattern: Pompeii

Pattern #: VS51 Pietra Vecchia
Dimensions: See drawing
CT-3: Crossville
Pattern: Strong
Pattern #: VS103 Giallo
Dimensions: 12" x 12"
CT-4: Daltile 2" x 2" Field
Pattern #: D440
Pattern Color: Honey
CT-5: Daltile 2" x 2"
Pattern #: D012
Pattern Color: Dark Green
CT-6: Daltile 2" x 2"
Pattern #: D007
Pattern Color: Cinnamon Range
CT-7: Daltile 2" x 2"
Pattern #: D469
Pattern Color: Galaxy

CT-8: Daltile 4" x 4" Field
Pattern #: 0137
Pattern Color: Canvas
CT-9: Daltile 4" x 4"
Pattern #: K112
Pattern Color: Timberline
CT-10: Daltile 4" x 4"
Pattern #: 1469
Pattern Color: Galaxy
CT-11: Daltile 4" x 4"
Pattern #: K180
Pattern Color: Chamois

Solid Surfacing Material

SS-1: Corian - all window sills, restroom thresholds and casework as shown on the drawings
Color: Moss (C)
SS-2: Corian - sinks and countertops in restrooms
Color: Tumbled Glass (F)

Plastic Laminate

PL-1: Pionite
Color Name: Beige Linen
Color #: AT301 Suede
PL-2: Formica
Color Name: Aluminum Soft
Color #: 4248
PL-3: Pionite
Color Name: Sage
Color #: SV720
PL-4: Wilsonart
Color Name: Versailles Anigre
Color #: 7923-07
PL-5: Wilsonart
Color Name: Tawny Legacy
Color #: 4663-60
PL-6: Pionite
Color Name: Olive Serenity
Color #: AV801
PL-7: Wilsonart

Color Name: Neutral Glace
Color #: 4143-60
PL-8: Wilsonart
Color Name: Hunter Nebula
Color #: 4627-60
PL-9: Pionite
Color Name: Manila Linen
Color #: AT231

ACT-1: USG
Pattern: Eclipse SLT

Toilet Partionals/Urinal Screens
Bobrick Solid Phenolic
Match Formica 7265-58
Sand Stone

Elevator Walls
Formica 7265-58
Sand Stone

Interior finish locations are identified in the Room Material and Finish Legend.

Manufacturers referenced are not intended to limit the selection of equal colors from other manufacturers. The above finishes are included as a guide for selection of some of the major interior finishes. All interior finishes shall coordinate with each other and with furniture finishes. Colors for finishes required for this facility that are not identified shall be compatible and coordinate with the listed finish colors. Coordinate selection of interior colors with the Contracting Officer. Deviations and additions to the above design must be approved the Corps of Engineers during the 60% and 100% submittal stages.

PART 2 NOT USED

PART 3 NOT USED

-- End of Section --

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SECTION 01005

STRUCTURAL REQUIREMENTS

PART 1 STRUCTURAL

1.1 PROJECT DESCRIPTION AND REQUIREMENTS

The 37th B1-B Squadron Operations Facility shall be a one-story structure with floor, roof and exterior wall configurations as indicated on the attached architectural drawings. The building shall be structurally designed and configured by the Design/Build Contractor in accordance with the criteria and other requirements stated herein.

1.2 REQUIRED DESIGN CRITERIA

The design publications listed below shall be used as sources of criteria for the structural design. The most current edition of the code or standard shall be used as criteria for the design. The criteria from these sources may be supplemented, but not supplanted, by applicable criteria contained in nationally recognized codes, standards, and specifications.

Some of these publications may be available to download in Acrobat PDF or MS Word file format at the following internet addresses:

<http://www.afcesa.af.mil/publications/ETLs/default/html>

<http://www.access.gpo.gov>

<http://www.access-board.gov>

<http://store.mil-standards.com>

<http://www.hnd.usace.army.mil/techinfo/index.asp>

<http://www.afcesa.af.mil/default.htm>

<http://www.e-publishing.af.mil>

<http://www.ccb.org/ufgs/ufgstoc.htm>

<http://www.dtic.mil>

1.2.1 Department of the Air Force Technical Manuals (AFM)

Technical Manuals can be obtained from the National Institute of Building Sciences Construction Criteria Base (CCB) on CD-ROM. Contact the CCB directly at 1-877-CCB-5667 for an order form or obtain an order form at the following internet address: <http://www.ccb.org>. See Section 01332 DESIGN AND CONSTRUCTION DELIVERABLES/PROCEDURES for related information. Some of these manuals may be available to download in Acrobat .pdf file format at the following Internet address:

<http://www.hnd.usace.army.mil/techinfo/index.asp>

<http://www.e-publishing.af.mil>

AFJI32-1058 Masonry Structural Design for Buildings (Oct 92)
See TM 5-809-3/Air Force AFM 88-3, Chap. 3

AFM 88-3 Chap. 7 Soils and Geology Procedures for Foundation Design of
Buildings and Other Structures (Except Hydraulic Structures) (Oct 83).

AFM 88-3 Chap. 15 Concrete Floor Slabs on Grade Subjected to Heavy Loads
(Aug 87) See TM 5-809-12

Army TM 5-818-7, Foundations in Expansive Soils (Sep 83).

Army TM 5-1300, Structures to Resist the Effects of Accidental Explosions
(INCL C1) (Nov 90).

1.2.2 US Army Corps of Engineers Technical Instructions (TI)

These publications are available at <http://www.usace.army.mil/techinfo/index.asp> listed under "Engineer Publications".

UFC 3-310-01 Load Assumptions for Buildings (Jun 2000)

TI 809-02 Structural Design Criteria for Buildings (Sep 99)

TI 809-04 Seismic Design for Buildings (Dec 98)

TI 809-07 Design of Cold-Formed Load Bearing Steel Systems and Masonry
Veneer/Steel Stud Walls (Nov 98)

TI 809-29 Structural Considerations for Metal Roofing (Aug 98)

TI 809-30 Metal Building System (Aug 98)

TI 809-52 Commentary on Snow Loads (Aug 98)

1.2.3 Department of the Army Engineering Technical Letters

Available at <http://www.usace.army.mil/techinfo/index.asp> listed under
"Engineer Publications".

ETL 1110-3-438 Indoor Radon Prevention and Mitigation (Sep 93)

1.2.3 American Society of Civil Engineers (ASCE) Publications

ASCE 7-02 Minimum Design Loads for Buildings and Other Structures

1.2.4 American Concrete Institute Publications

ACI 318-02 Building Code Requirements for Structural Concrete and
Commentary

ACI 530-02 Building Code Requirements for Masonry Structures and
Commentary

SP-66 (94) ACI Detailing Manual

1.2.5 American Institute of Steel Construction Publications

Cold-Formed Steel Design Manual (1996 Edition)

Specification and Commentary for the Design of Cold-Formed Steel Structure Members (1996 Edition)

Specification for Structural Steel Buildings - Allowable Stress Design, Plastic Design (ASD) (June 1, 1999)

Load and Resistance Factor Design Specification for Structural Steel Buildings (LRFD) (December 27, 1999)

Manual of Steel Construction - Allowable Stress Design (AISC, 9th Edition).

Manual of Steel Construction, Volume II - Connections (AISC, latest edition).

Hollow Structural Sections Connections Manual (AISC, latest edition).

Hollow Structural Sections Manual (AISC, latest edition).

Seismic Provisions for Structural Steel Buildings, AISC, latest edition.

1.2.6 Federal Emergency Management Agency

These publications can be obtained at no charge from:

FEMA Report Distribution Center
PO Box 2012
Jessup, MD 20794
Telephone: 800-480-2520; Fax: 301-497-6278)

FEMA 368 NEHRP Recommended Provisions for Seismic Regulations for New Buildings and Other Structures Part 1 - Provisions (March 2001)

FEMA 369 NEHRP Recommended Provisions for Seismic Regulations for New Buildings and Other Structures Part 2 - Commentary (March 2001)

1.2.7 Steel Deck Institute (SDI) Publications

Diaphragm Design - Manual (2nd Edition, 1987)

Design Manual for Composite Decks, Form Decks and Roof Decks (Pub No. 30)

1.2.8 Steel Joist Institute (SJI) Publications

Standard Specifications, Load Tables and Weight Tables for Steel Joists & Joist Girders (Aug 2000)

1.2.9 Department of Defense Standards

UFC 4-010-01 DoD Minimum Antiterrorism Standards for Buildings, 31 July 2002.

1.2.10 Building Codes

2000 International Building Code (IBC)

1.2.11 Geotechnical Engineering Report/Letter

Geotechnical Engineering Report, 37th Bomber Squadron Operations Facility ,
Ellsworth Air Force Base, Box Elder, South Dakota, Terracon Project No.
05035024, dated 29 April 2003 (Attachment 15)

Geotechnical Engineering Letter, 37th Bomber Squadron Operations Facility,
Ellsworth Air Force Base, Box Elder, South Dakota, Terracon Project No.
05035024, dated 7 May 2003 (Attachment 16)

1.2.12 American Welding Society

AWS D1.1-2000 Structural Welding Code

1.3 STRUCTURAL LOADING CRITERIA

Structural loading criteria shall be developed using the criteria sources and following the procedures indicated below. The 37th B1-B Squadron Operations Facility shall be classified as an occupancy Category II facility, in accordance with ASCE 7-02 for the purpose of calculating wind and snow loads. Structural members shall be designed for the load combinations as found in ASCE 7-02.

1.3.1 Roof Live Loads

1.3.1.1 Snow Load

Roof snow load, including additional loading due to snow drifting where appropriate, shall be calculated and applied in accordance with ASCE 7-02 and Army Corps of Engineers TI 809-52, using a ground snow load of 20 psf for drifting analysis.

1.3.1.2 Rain Loads

Rain loads shall be considered in accordance with ASCE 7-02.

1.3.1.3 Minimum Roof Live Load

A minimum roof live load of 30 psf shall be used as a loading condition for the roof, independent of the calculated snow load.

1.3.2 Floor Live Loads

Minimum uniformly distributed floor live loads shall be as listed below:

AREA	LIVE LOAD (psf)
Mechanical/Electrical Rooms	140
First Floor Corridors and Lobby	100
Labs and Classrooms	100
Computer Server Room	140
Stairs and landings	100
Offices/Work Stations	50
Restrooms	60
All Other Areas	100

The floors shall be capable of supporting a 2000# concentrated load applied over a 30" by 30" area positioned anywhere. Stairs and landings shall be designed to support the uniform load listed above, or a concentrated load of 300 lbs. on an area of 4 square inches, whichever produces the greater

load effects.

1.3.3 Wind Loads

Wind loads shall be calculated in accordance with the procedures outlined in ASCE 7-02 using Exposure "C" and a Basic Wind Speed (3-Second Gust Speed) of 90 mph. Importance Factor, I is "1.0" per Table 6-0, ASCE 7-02. Wind loads for both the main wind-force resisting system and for components and cladding shall be considered.

1.3.4 Seismic Loads

The 37th B1-B Squadron Operations Facility shall be designed to withstand seismic loading in accordance with Army Corps of Engineers TI 809-04, FEMA-368, and FEMA-369. Seismic Parameters for Ellsworth AFB are as follows:

SS (Short Period Spectral Response Acceleration) = 0.15g
S1 (1 Second Period Spectral Response Acceleration) = 0.04 g
Site Classification = D.
Seismic Use Group I
Seismic Design Category = A.

1.3.5 Dead Loads

Design for all known dead loads. Minimum design dead loads for common building materials shall be obtained from ASCE 7-02. Equipment loads and loads for materials not listed in that publication can be obtained from other recognized sources. In addition to known dead loads, design for a minimum of 5 psf throughout the roof structure to account for miscellaneous mechanical and electrical equipment loads.

1.3.6 Lateral Partition Loads

The minimum design wind pressure on interior partitions shall be 10 psf normal to the partition.

1.3.7 Design Temperatures

Design differential temperatures shall be a minimum 60 degrees F for thermal analysis of framing systems.

1.3.8 Deflections

Floors, roof members, and walls shall be designed to have deflections limited to the following maximums.

1.3.8.1 Floors

The deflection due to live load of structural members supporting floors shall not exceed 1/360 of the span.

1.3.8.2 Roofs

The deflection due to live, snow, or wind load of structural members supporting roofs shall not exceed the following:

1. 1/360 of the span where plaster or other brittle ceiling materials are attached or suspended.

2. 1/240 of the span for other structural members supporting roof or suspended ceilings other than plaster.

1.3.8.3 Partitions

The lateral deflection of interior partitions due to internal wind pressures shall not exceed 1/360 of the partition span.

1.3.9 Special Structural Design Requirements

The structural design shall include design to comply with the requirements of UFC 4-010-01 DoD Minimum Antiterrorism Standards for Buildings, 31 July 2002. The minimum structural requirements shall apply, with the following clarifications.

1.3.9.1 Paragraph B-2.4

This paragraph states "Unreinforced masonry walls are prohibited for the exterior walls of new building". Unless required by other analyses (i.e., blast, wind, seismic, etc.) the minimum percentage of steel used to reinforce masonry walls shall be 0.05% vertically with a maximum spacing of 48 inches.

1.3.9.2 Glazing Components

The design of window components (glass and frames) shall also be designed in accordance with the "Recommendations for Windows in Proposed Ellsworth AFB B1-B Squad OPS/AMU" dated 17 July 2001 (Attachment 7). Incident and reflective design pressures and static edge shears presented are preliminary for bidding purposes and will be finally evaluated during scheduled interim design reviews. Alternate analysis using the design explosive charge weight and standoff distance may be performed by the bidder, subject to review and approval.

1.3.9.3 Wall System Sub-Framing Assemblies

The design requirements stated in 1.3.9.2 maintain the integrity of the framed glass assemblies within the walls or sub-framing assemblies, but do not prevent permanent damage of the wall or sub-framing assemblies/components. The design of the supporting wall or sub-framing assemblies may permit permanent yielding of these components in accordance with TM 5-1300 dated 19 Nov 90, but must prevent the supporting sub-framing components from breaking free of the main structure. In other words, significant permanent damage and/or yielding are permissible, but total collapse and separation from the main structure in such a manner as to cause significant hazard to occupants is not acceptable.

1.4 STRUCTURAL MATERIALS

Materials for structural elements shall be as indicated herein or on the attached drawings. Where materials are not indicated, selection shall be at the Contractor's discretion, with the following limitations. Wood products are not acceptable for use as structural elements.

1.4.1 Structural Steel

1.4.1.1 Design

Structural steel shall be designed in accordance with AISC Specification

for Structural Steel Buildings - ASD or LRFD. All structural steel members shall be designed by the structural engineer to support all applicable loads. Structural drawings shall clearly show all structural members, connections and their locations. Provide expansion joints through steel framed buildings at 300 feet on center maximum.

1.4.1.2 Connections

Types of connections shall be consistent with the design assumptions for the basic type of steel construction used. Connections shall be designed and detailed to provide adequate capacities for the applied forces and moments. Connection design shall be the responsibility of the structural engineer and shall not be delegated to the steel fabricator.

1.4.2 Steel Joists and Joist Girders

The design and selection of steel joists and joist girders shall be governed by the Steel Joist Institute (SJI) Standard Specifications, Load Tables and Weight Tables for Steel Joists and Joist Girders. The net wind uplift requirements shall be clearly delineated on the drawings. Joists requiring special configurations or design to resist wind uplift and non-uniform loads shall be designated as such on the drawings and the required design loads indicated, per SJI recommendations. Joist end supports and anchorage to resist uplift shall be designed to accommodate the applied forces, including those resulting from wind and seismic activity.

1.4.3 Steel Decking

The design and selection of steel deck shall be in accordance with the provisions of the Steel Deck Institute (SDI) Design Manual. Minimum required section properties of deck sections shall be determined as prescribed by the appropriate Specifications of the SDI Design Manual, and shall be specified or indicated on the drawings. Where the steel deck is designed to function as a shear diaphragm, the design shall be in accordance with the provisions of the Steel Deck Institute (SDI) Diaphragm Design Manual and Army Corps of Engineers TI 809-04.

1.4.4 Masonry

1.4.4.1 Design

Masonry design shall be in accordance with ACI 530-02, AFM 88-3 Chap. 3. Reinforcement shall be sufficient to satisfy the calculated requirements for strength, shrinkage crack control, and seismic design. In no case shall reinforcement be less than the minimum seismic reinforcement required by TI 809-04. If masonry walls are used in conjunction with steel framing as non-load-bearing and non-shear-resisting elements, the connections between walls and the structural steel frames must be designed to allow vertical and horizontal frame deflection without transferring loads from steel to adjoining masonry walls. Designer shall submit masonry details and wall reinforcing elevations for all structural walls.

1.4.4.2 Masonry Material Properties

Specified compressive strength of masonry shall be $f'_m = 1,500$ psi. Hollow concrete masonry units shall conform to ASTM C90, Type I. Concrete building bricks shall conform to ASTM C55, Type I. Masonry units for use as exterior facing shall conform to Grade N. Type S mortar shall be specified for all

masonry. Specified compressive strength of grout shall be 3,000 psi minimum. Masonry exposed directly to the ground or weather shall be rated for severe exposure conditions. Facing brick shall conform to ASTM C 216, Type FDS. Brick exposed directly to the ground or weather shall be grade SW, other brick may be SW or MW at contractor option.

1.4.4.3 Crack Control

Concrete masonry crack control measures comprised of masonry control joints, joint reinforcement, and bond beams shall be incorporated in the design of concrete masonry walls and partitions. Masonry Control Joints (MCJ) shall be judiciously located at spacings no greater than the maximums recommended in TM 5-809-3/Air Force AFM 88-3, Chap. 3 and shall be shown on the Architectural Elevations. Control joints shall not be placed closer than 24" to openings. Brick expansion joints (BEJ) for brick faced buildings shall be located as recommended by TM 5-809-3/Air Force AFM 88-3, Chap. 3. Brick expansion joints (BEJ) locations shall be shown on the architectural exterior wall elevations and floor plans.

1.4.5 Reinforced Concrete

1.4.5.1 Design

Reinforced concrete design shall be in accordance with ACI 318 and related current ACI publications which are applicable to the design, Air Force Manual AFM 88-3 Chap. 15, Army Corps of Engineers TI 809-02, and TI 809-04, as applicable. All concrete elements, including slabs-on-grade, shall be reinforced with temperature and shrinkage reinforcement as a minimum. Temperature reinforcement shall be as recommended by ACI 318 and TI 809-02, as appropriate. Slab reinforcement shall be deformed steel reinforcing bars, not welded wire fabric.

1.4.5.2 Concrete Strength

The required 28-day compressive strength of the concrete shall be left to the Contractor's discretion, except that 3,000 psi shall be a minimum for footings, walls, grade beams and slabs. For concrete that is to be installed with exterior exposure, air-entrainment, producing a total air content in the concrete between 4 and 7 percent by volume, shall be required. Concrete in contact with soil shall be made with Type II cement. Concrete shall have a water/cement ratio (w/c) not less than 0.45. The Geotechnical Engineering Report (Attachment 15), shall be used as the basis for preparation of the final design.

1.4.5.3 Reinforcing Bar Usage Limitations

Grade 60 bars shall be used for concrete design. When available, grade 40 bars may be used for secondary reinforcement such as stirrups and ties. Minimum bar size shall be #4 bars except for slab reinforcement and stirrups and ties, which may be #3 bars as per ACI.

1.4.5.4 Concrete Joints

Control joints and contraction joints shall be located to reduce concrete cracking to a minimum. All exposed concrete joints shall be sealed with appropriate joint sealants.

1.5 STRUCTURAL FRAMING SYSTEMS

The structural systems used for the 37th B1-B Squadron Operations Facility shall be selected and designed by the Contractor. The Basic Seismic-Force-Resisting System shall conform to one of the types indicated in Table 7-1 of TI 809-04 subject to the limitations on height based on the Seismic Design Category indicated in the table. The lateral load resisting system shall incorporate bracing, moment resisting frames, shear walls, diaphragms, or any combination thereof, provided the elements of the system are compatible with the attached architectural floor plan. Pre-engineered metal building systems are not acceptable for the structural framing system. The structural framing system chosen shall meet all aforementioned project requirements and the requirements listed below.

1.5.1 Roof Framing

The roof framing shall slope as required for the roofing system used, and as indicated on the drawings. The roof slope shall be accomplished by sloping of the structural framing members. The design of roof framing members shall include consideration of any concentrated loads from suspended mechanical and electrical equipment, including cable trays, piping and HVAC units. The location and magnitude of suspended equipment loads shall be closely coordinated with the mechanical and electrical system designs. Coordinate the hanging of a 2,000 pound concentrated load from the roof structure above the Heritage Room 249, as found in Section 1/A-5.1.

1.5.2 Location of Structural Elements

Structural elements, including columns, bracing, shear walls and load-bearing walls shall be located as required by the structural design. The structural design and corresponding selection and location of structural elements shall be compatible with the floor plan, roof plan, elevations and other architectural drawings included in the attachments to this document. Columns shall be located adjacent to walls where possible, and in such a manner that doorways or other access ways are not obstructed. Free standing isolated columns should be minimized. Use of structural bracing shall be minimized, and shall be limited to locations where bracing is concealable at interior or exterior wall lines and does not obstruct windows, doors or other openings. Shear walls, where used, shall be located in coordination with architectural partition requirements.

1.6 EXTERIOR/INTERIOR WALLS

Criteria indicated in Section 01003 ARCHITECTURAL BUILDING REQUIREMENTS shall be incorporated into the design of all walls. The Architectural floor plans included in the attachments to this document indicate the location of walls to be incorporated into the project.

1.6.1 Non-Load-Bearing Walls

Non-load-bearing walls shall be laterally braced by the overhead roof structure, but shall be connected in a manner which provides for vertical deflection of the structure without inducing vertical loads into the wall.

1.6.2 Shear Walls

Shear walls, where used, shall be constructed of reinforced concrete or reinforced concrete masonry units. Shear walls shall be designed in accordance with ACI 318, ACI 530, TM 5-809-3/Air Force AFM 88-3 Chap. 3, and Army Corps of Engineers TI 809-04.

1.7 FOUNDATIONS

Design of foundation components shall be the responsibility of the contractor. The components of the foundation system shall be constructed of reinforced concrete. The required 28-day compressive strength of concrete for the foundations shall be left to the Contractor's discretion, except that 3,000 psi shall be a minimum. All parts of the foundation system shall be designed to keep dead load footing pressures relatively uniform, in order to minimize differential settlements. Soils and foundation analysis have been provided by the Government and are attached; however, Contractor shall arrange for an open hole inspection by the Government's geotechnical engineer to verify soils and foundation requirements and design. The Contractor will not be required to prepare a second geotechnical report.

1.7.1 Earthwork

Earthwork for the 37th B1-B Squadron Operations Facility shall conform to the requirements set forth in UFGS Section 02315A EXCAVATION, FILLING AND BACKFILLING FOR BUILDINGS and to requirements stated in the reports titled, "Geotechnical Engineering Report" (Attachment 15) and the "Geotechnical Engineering Letter" (Attachment 16). The Contractor shall adhere to the recommendations in the Geotechnical Engineering Letter (Attachment 16) for all subgrade prep work beneath the building and to a point 5 feet outside the edges of the building footings. For all other subgrade prep work and all other associated structural design matters, the Contractor shall adhere to the recommendations in the Geotechnical Engineering Report (Attachment 15).

1.7.2 Foundation Systems

The foundation system for the 37th B1-B Squadron Operations Facility shall consist of a combination of spread footings and continuous strip footings under exterior walls. Footings shall bear on a layer of non-expansive structural fill, with depth and width determined from the design information provided in the Geotechnical Engineering Report (Attachment 15) and the Geotechnical Engineering Letter (Attachment 16), as outlined in Paragraph 1.7.1 above. Install separation geotextile between existing subgrade and non-expansive structural fill following over-excavation to recommended depth. The footings shall have subdrains tied to local drainage system for positive drainage away from footings.

1.7.3 Design Parameters

Parameters used for foundation design, including the allowable soil bearing pressure, lateral earth pressure coefficients and design footing depths shall be in accordance with the Geotechnical Engineering Report (Attachment 15) and the Geotechnical Engineering Letter (Attachment 16), as outlined in Paragraph 1.7.1 above. The allowable soil bearing pressure represents the allowable soil stress at the base of footings in excess of that due to existing overburden. The weight of any fill added to the site above that required for frost protection shall be subtracted from the allowable soil bearing pressure to arrive at a net allowable pressure due to structural loads.

1.7.4 Foundation Perimeter Insulation

Perimeter insulation shall be installed on the interior face of all exterior perimeter foundation walls. Insulation shall extend from the

bottom of the floor slab down to top of footing or down to design frost depth.

1.7.5 Structural Stoops at Exterior Doorways

All exterior pedestrian doorways require structural stoops. Stoops shall have foundation walls extending down to frost depth and shall be rigidly attached to building foundation walls. Stoops shall be constructed so as to have a six inch void below stoop slab. The stoop slab shall be flush with the interior floor slab at the threshold and shall slope away from the building at a 2 percent slope.

1.8 CONCRETE FLOOR SLABS-ON-GRADE

Design of slabs shall be in accordance with TI 809-02, AFM 88-3 Chap. 15, the Geotechnical Engineering Report (Attachment 15), and the following detailed instructions.

1.8.1 General

Slabs shall be designed as "floating slabs" without rigid edge support, and with lateral and vertical movement unrestrained, except where noted below. Where compressible filler is used as a cushion, its thickness shall be not less than 6 inches. An isolation joint, consisting of a 1/2 inch layer of expansion joint material, is required where slabs abut vertical surfaces. Slab thickness shall be selected in accordance with TI 809-02, or as required by designing to other RFP requirements. Slabs shall be reinforced with reinforcing bars with a minimum of 0.15 percent steel based on cross sectional area. Crack control measures shall be incorporated in the slab design. Control joint details and spacings shall be as delineated in TI 809-02. The required 28-day compressive strength of concrete for slabs shall be left to the Contractor's discretion, except that 3,000 psi shall be a minimum.

1.8.2 Interior Concrete Slabs-on-Grade

A 20-mil un-reinforced vapor barrier shall be placed over subgrade, with an 8 oz/sq yd non-woven geotextile over the vapor barrier, a 6-inch capillary water barrier over the geotextile, and a thin sand layer over the capillary water barrier to fill voids and cover the aggregate at the surface. The slab shall then be placed over the thin sand layer. This slab-on-grade system supercedes any recommendations made in the Geotechnical Engineering Report (Attachment 15) and the recommendations of TI 809-02. This statement does not relieve the Contractor of the over excavation and structural fill requirements found in the Geotechnical Engineering Report (Attachment 15) and the Geotechnical Engineering Letter (Attachment 16), as outlined in Paragraph 1.7.1 above. The vapor barrier shall be manufactured of polyvinyl chloride (PVC), polypropylene PP or linear low-density polyethylene (LLDPE). The capillary water barrier material shall be not less than 6 inches compacted thickness, and shall be placed directly beneath the slab, on top of the vapor barrier and geotextile. All slab crack control joints, construction joints, isolation joints between edges of slabs and vertical surfaces, and any mechanical, plumbing or electrical penetrations through the floor slab shall be sealed with a flowable polyurethane sealant. No welded wire fabric shall be used in slabs-on-grade. Spacing of construction and control joints shall be applied accordingly.

1.8.3 Capillary Water Barrier Layer

Capillary Water Barrier material shall consist of clean, crushed, nonporous rock, crushed gravel, or uncrushed gravel. The maximum particle size shall be 1 1/2", and no more than 2 percent by weight shall pass the No. 4 sieve. The capillary water barrier shall be placed in a minimum of 2 lifts, each compacted by a hand operated, vibratory compactor.

1.8.4 Slabs to Receive Quarry Tile, Ceramic Tile or Floor Mat Finish

Slabs to receive finishes requiring an inset grout bed or frame shall be minimum 5 inch uniform in thickness, and shall be reinforced with #4 bars at 12 inches o.c. each way. Slabs shall be depressed as necessary to receive the ceramic tile or the floor mat and frame. At interior edge locations, the slab shall be thickened and doweled into the adjacent slab with 3/4 inch diameter x 16 inch long dowels at 12 inches o.c. At locations where the slab abuts an exterior or interior foundation wall, it shall be supported by the wall. Ensure that all edges of the thickened 5 inch slab-on-grade are doweled into adjacent slabs and foundation walls.

1.8.5 Concrete Floor Slab Finishes

Exterior ramps and stoops shall be given a non-slip finish. Slab finishes in other portions of the building shall be per the requirements of Sections 01003 ARCHITECTURAL BUILDING REQUIREMENTS and 01004 INTERIOR DESIGN REQUIREMENTS.

1.8.6 Interior Equipment Pads

Floor mounted mechanical and electrical equipment shall be installed on 6" thick raised concrete housekeeping pads. The pads shall be reinforced with at least the minimum temperature reinforcement required. The pads shall be sized 6" larger all around than the piece of equipment furnished and all edges of the pads shall be chamfered.

1.8.7 Equipment Vibration Isolation

All vibration producing mechanical and electrical equipment shall be mounted in such a manner as to prevent the transfer of vibrations to adjacent parts or areas of the building. For any large vibration producing equipment installed within the facility, the equipment shall be supported on individual isolated foundations. The isolated foundation shall be separated from the building slab by a continuous 3/4 inch expansion joint.

1.9 OTHER STRUCTURAL WORK

1.9.1 Standing Seam Metal Roofing

Standing seam metal roofing shall be structural type, and shall be specified using UFGS Section 07416A STRUCTURAL STANDING SEAM METAL ROOF (SSSMR) SYSTEM. Wind uplift diagrams used for the design of the roof system shall be shown on the design drawings.

1.9.2 Exterior Equipment Pads

Exterior mechanical or electrical equipment, if any, shall be installed on concrete pads. The pads shall be a minimum of 8 inches thick and shall be reinforced with at least the minimum temperature reinforcement required. The pads shall be sized at least 12 inches larger all around than the piece of equipment furnished and all edges of the pad shall be chamfered. Design

of exterior pads shall be coordinated with Mechanical and Electrical system designs, and shall incorporate the requirements of any other specific mechanical or electrical criteria included in this RFP.

1.9.3 Exterior Screen Walls

Exterior screen walls for the purpose of concealing equipment shall be constructed of reinforced concrete masonry units and brick veneer designed to withstand 90 mph wind speed, with appearance to match the exterior of the 37th B1-B Squadron Operations Facility. See Section 01002 SITE WORK. Screen wall footings shall extend below frost depth.

-- End of Section --

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SECTION 01006

MECHANICAL REQUIREMENTS

PART 1 MECHANICAL REQUIREMENTS

1.1 MECHANICAL SYSTEMS CRITERIA

1.1.1 Required Design Criteria

Mechanical systems, including HVAC systems, plumbing, gas distribution and building temperature controls shall be designed to comply with this chapter and the documents listed below to the extent referenced in this section. The publications are referred to in the text by basic designation only. The latest edition of the following standards and codes in effect and amended as of date of supplier's proposal, and any subsections thereof as applicable, shall govern design and selection of equipment and material supplied:

Some of these publications may be available to download in Acrobat PDF or MS Word file format at the following internet addresses:

<http://www.afcesa.af.mil/publications/ETLs/default/htm>

<http://www.access.gpo.gov>

<http://www.access-board.gov>

<http://store.mil-standards.com>

<http://www.hnd.usace.army.mil/techinfo/index.asp>

<http://www.afcesa.af.mil/default.htm>

<http://www.e-publishing.af.mil>

<http://www.ccb.org/ufgs/ufgstoc.htm>

<http://www.dtic.mil>

Air Force Engineering Technical Letter (ETL) 90-10 Commissioning of Heating, Ventilating, and Air-Conditioning (HVAC) Systems Guide Specifications, dated 17 Oct 1990

Air Force Engineering Technical Letter (ETL) 94-2 Utility Meters in New and Renovated Facilities, dated 10 June 1994

Air Force Engineering Technical Letter (ETL) 94-4 Energy Usage Criteria for Facilities in Military Construction Program, dated 19 August 1994

Air Force Engineering Technical Letter (ETL) 00-5 Seismic Design for Buildings and Other Structures, dated June 2000

Air Force Instruction (AFI) 31-401 Information Security Program Management

Air Force Handbook (AFH) 32-1163 dated 1 July 2000

Air Force Manual (AFM) 32-1070 Chap. 4, Plumbing, dated 31 Aug 1993

Air Force Manual (AFM) 88-12, Chap. 1, Gas Distribution

American Society for Testing and Materials (ASTM) publications - A53

American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE), the following:

Guides; Terminology of HVAC&R, 2nd Edition, etc.

Guideline 1-1996, The HVAC Commissioning Process

Handbooks; 2002 Refrigeration, 2001 Fundamentals, 2000 HVAC Systems & Equipment, 1999 HVAC Applications

Standards; 15-1994 Safety Code for Mechanical Refrigeration; 55a-1995 Thermal Environmental Conditions for Principles of Heating, Ventilating and Air-Conditioning; 62-1999 Ventilation for Acceptable Indoor Air Quality; 90.1-2001 Energy Standard for Buildings Except Low-Rise Residential Buildings (IESNA & ANSI Co-sponsored); etc.

Army Technical Instructions TI 809-04 Seismic Design for Buildings, dated 31 Dec 1998

Army Technical Instruction TI 810-91 Indoor Radon Prevention and Mitigation, dated 3 August 1998

American National Standards Institute (ANSI) publications - A117.1-1998 Guidelines for Accessible and Usable Buildings and Facilities, ICC/ANSI; Z83.6, 61; Section 8 & 9; and A13.1 Schemes for Identification of Piping Systems; Z223.1

American Society of Mechanical Engineers (ASME), 22 Law Drive, P.O. box 2900, Fairfield, N.J. 07007-2900

Americans with Disabilities Act (ADA) Standards for Accessible Design, 28 CFR Part 36

Department of Defense (DoD) Regulation 5200.1-R Information Security Regulation

UFC 4-010-01 DoD Minimum Antiterrorism Standards for Buildings, 31 July 2002

Executive Order 13123, Greening the Government Through Energy Management, dated 3 June 1999.

Federal Register/Volume. 46, No. 222

Instrument Society of America Standard (ISA S75.01)

National Fire Codes (NFPA), with most current updates

Safer Drinking Water Act (SDWA) of 1998

SMACNA Standards, Sheet Metal and Air Conditioning Contractors National Association, Inc

Title 10 CFR Part 436 Federal Energy Management and Planning Programs, Life Cycle Cost Methodology and Procedures, January 25, 1990

Underwriters Laboratories (UL 142), (UL 441)

International Building Code (2000)

International Plumbing Code (2000)

National Electrical Manufacturers Association (NEMA), most Current Updates

AABC-MN-1 (Associated Air Balance Council) National Standards for Total System Balance (2002)

ASTM B 88-02 Standard Specification for Seamless Copper Water Tube

Executive Order 12902, Energy Efficiency and Water Conservation at Federal Facilities (1994)

FCC Rules and Regulations, Part 15, Wireless Rules (2002)

Federal Energy Policy Act (1992)

Federal Regulation 10 CFR 434 (Oct 2001 - ASHRAE/IESNNA 90.1)

NEBB-01 (National Environmental Balancing Bureau) Procedural Standards for Testing, Adjusting and Balancing of Environmental Systems (2001)

NSF 61, Section 9, Lead Free Requirements of Safe Drinking Water Act (1996)

1.2 GENERAL REQUIREMENTS

The mechanical design shall consist of heating, ventilating, and air-conditioning (HVAC), gas distribution, HVAC controls, and plumbing. Drawings, specifications, design analysis and calculations shall be provided as required for the proposal, the 60 percent design, and the Final design submittals, and shall be in accordance with Section 01336 - 60 PERCENT DESIGN REQUIREMENTS, and Section 01338 - 100 PERCENT DESIGN REQUIREMENTS.

This chapter contains instructions and engineering requirements for the mechanical design of the following:

Equipment Identification and Abbreviations.

Identification of Piping.

Seismic Protection for Mechanical Piping, Ductwork, and Equipment.

Thermal Insulation of Mechanical Systems.

Plumbing System.

Exterior Gas Piping System.

Interior Gas Piping System.

Hydronic Heating System.

Air Supply Distribution System.

HVAC System.

Refrigeration/Chilled Water System.

Ventilation and Exhaust Systems.

Building Temperature Control System.

Testing, Adjusting, and Balancing of HVAC Systems.

Commissioning of HVAC Systems.

Operation and Maintenance Requirements.

Energy Use Cost Budget (ECB) Compliance Check.

Testing.

Training.

Life Cycle Cost Analysis (LCCA).

- a. Provide building mechanical systems, complete and ready for operation. The design and installation of all mechanical systems, including manufacturer's products, shall meet the instructions and requirements contained herein and the requirements of the referenced technical guide specifications. Where conflicts between these instructions and the guide specifications or above mentioned criteria exist, these instructions shall take precedence. Any installation requirements within these instructions, but not contained in the specifications, shall be added to the specifications or shown on the drawings.
- b. Mechanical designs shall give maximum consideration to the comfort of the occupants. The design shall also be economical, maintainable, energy conservative and shall take into account the functional requirements and planned life of the facility. Mechanical designs shall also consider life cycle operability, maintenance and repair of the facility and real property installed equipment components and systems. Ease of access to components and systems in accordance with industry standards and safe working practices is a design requirement. All like equipment and accessories shall be from a single manufacturer.
- c. Material and equipment shall be a standard product of a manufacturer regularly engaged in the manufacture of the product and shall be essentially duplicate items that have been in satisfactory use for at least 2 years prior to bid opening. The label or listing of the Underwriters Laboratories, Inc., will be accepted as evidence that the materials or equipment conform to the applicable standards of that agency. In lieu of this label or listing, a statement from a nationally recognized, adequately equipped testing agency indicating that the items have been tested in accordance with required

- procedures and that the materials and equipment comply with all contract requirements will be accepted.
- d. Calculations shall be provided for all mechanical equipment such as boilers, heating & cooling coils, chillers, condensing units, unit heaters, piping, pumps, expansion tanks, heat exchangers, fans, ducts, storm/drainable louvers, gas services and piping, plumbing, water heaters, etc. Heating and cooling calculations may be provided by computer analysis i.e., Elite Software Inc., Trane Trace Load 700, Carrier E20-II Hourly Analysis Program (HAP) etc. Provide a block heating and cooling load on the facility to be used for boiler and chiller sizing. Heat loss and gain calculations shall use actual design U-values.
 - e. Design Energy Usage shall meet or be below Energy Use Cost Budget target (see paragraph ENERGY USE COST BUDGET (ECB) COMPLIANCE CHECK). This shall be accomplished by decreasing glazing or by increasing roof or wall insulation as necessary but it shall not be below the level required by Section 01003 ARCHITECTURAL BUILDING REQUIREMENTS. Also, develop and use building modeling and analysis techniques to establish a base case that meets the minimum prerequisite standard ASHRAE 90.1. Then compare the baseline design energy use cost budget for regulated energy components described in the requirements of ASHRAE 90.1 as demonstrated by a whole building simulation using the Energy Use Cost Budget Method described in section 11 of that document, with the actual energy use COST budget for this project in percentile. Regulated energy components include HVAC systems, building envelope, service hot water systems, lighting and other regulated systems, defined by the standard. Identify the percentile the actual design energy use cost budget is above or below the baseline case in the design analysis.
 - f. "Green Buildings Technology": Mechanical equipment shall be energy efficient per Executive Order 13123 and ASHRAE 90.1. Where products are not yet rated as energy efficient products by ENERGY STAR the Contractor shall strive to provide products that meet the above criteria and be in the upper 25 percent of energy efficiency as designated by Federal Energy Management Program (FEMP). See other paragraphs for other "Whole Building Design" minimum requirements.
 - g. The noise criteria listed in paragraph 1.12.1 shall be met in sizing of air inlet and outlet devices, ductwork, sound traps, acoustical ductwork lining, and acoustical performance of mechanical equipment. A computer model of the HVAC system noise sources, duct sizing, duct construction, duct velocities, noise attenuation, and room noise criteria (NC) values shall be included as an integral part of the HVAC design process. The computer model shall use, as a minimum, noise levels broken into octave sound bands. Hard copy results of the computer model shall be provided with each submittal.

1.2.1 Facility Description

The 37th B1-B Squadron Operations Facility will include vestibules, waiting areas, office areas, conference areas, auditorium, training rooms, locker rooms, storage rooms, janitor closets, public men's and women's toilets, private men's and women's toilets, copy/filing rooms, electrical/communications rooms, and mechanical rooms. The facility shall be occupied approximately 12 hours per day, Monday through Saturday; hours can change, depending on the base mission. The facility shall be one story in height. Following is a list of rooms included in the facility along with the number of occupants, computers, etc. for HVAC load calculation purposes.

37TH B1-B SQUADRON OPERATIONS FACILITY, ELLSWORTH AFB, SD

Room	Room#	Occupants	PC's/Monitors/Prntrs/Misc
Lower Lobby	100	0	0/0/0/0
Lower Elevatory Lobby	101	0	0/0/0/0
Elevator Equipment Room	102	0	0/0/0/1
Vestibule	103	0	0/0/0/0
L.S. Training	104	16	1/1/0/Projector
Hall	105	0	0/0/0/0
DOL	106	4	2/2/1/0
Arms	107	1	0/0/0/0
L.S. Equipment Maintenance	108	10	2/2/0/3 Equip. Items* (Sink)
Fitting Room	109	1	0/0/0/0
Fitting Room	110	1	0/0/0/0
L.S. Storage	111	3	1/1/0/0
NVG	112	1	0/0/0/Equip. Items*
Air Crew Lockers	113	16	0/0/0/0
	(E.W.C.)		
Men's Restroom	114	0	0/0/0/0
Janitor	115	0	0/0/0/0
Women's Restroom	116	0	0/0/0/0
Recycle	117	0	0/0/0/0
Comm.	118	0	0/0/0/0*
MA Ready Room	119	60	0/0/0/0
Stor. Proj.	120	2	1/1/0/Projector
Storage	121	0	0/0/0/Freezer
Training	122	28	0/0/0/Equip. Items*
	(Kitchen Equip., Sink, Floor Drain @ Vending)		
MA Dispatch	123	20	0/0/0/0
CDC	124	8	6/6/1/0
VEH/ENV	125	3	2/2/1/0
TODO NCOIC	126	2	1/1/0/0
Sortie Support	127	6	3/3/1/0
TODO Library	128	6	4/4/0/0
Janitor	129	0	0/0/0/0
Men's Restroom	130	0	0/0/0/0
Corridor	131	0	0/0/0/0
Women's Restroom	132	0	0/0/0/0
AC	133	0	0/0/0/Equip Items* (Faucet/Wash Nozzle, Drain)
Janitor	134	0	0/0/0/0
Wash	135	0	0/0/0/Equip. Items*
	(Ice Machine, Hand Wash, Floor Drain)		
Vestibule	136	0	0/0/0/0
Tool Distribution	137	8	3/3/3/0
Tool Storage	138	6	2/2/1/Equip. Items* (Floor Drain)
CAMS	139	9	8/8/2/0
COSO	140	8	5/5/1/0
General Storage	141	4	0/0/0/Equip. Items* (Floor Drain)
Electrical Room	142	0	0/0/0/0*
Communications Room	143	0	0/0/0/0*
MOB Storage	144	4	0/0/0/Equip. Items* (Floor Drain)

37TH B1-B SQUADRON OPERATIONS FACILITY, ELLSWORTH AFB, SD

TMDE/Tools	145	6	1/1/1/Equip. Items*
Mech	146	0	0/0/0/0*
Train. NCOIC	147	2	1/1/0/0
NCOIC Weapons	148	2	1/1/0/0
Weapons	149	4	2/2/1/0
APG	150	4	3/3/1/0
NCOIC APG	151	2	1/1/0/0
Vestibule	152	0	0/0/0/0
Stair	153	0	0/0/0/0
Maint. Corridor	154	0	0/0/0/0
Lower Corridor	155	0	0/0/0/Copier & Shredder
Admin. Tech.	156	6	2/2/1/Equip. Items*
AFETS	157	3	2/2/1/0
Spec.	158	6	3/3/1/0
Comm. Sec. Storage	159	2	1/1/0/0
NCOIC	160	2	1/1/0/0
Conf.	161	20	1/1/0/Projector
Debrief	162	20	3/3/0/0
Corr.	163	0	0/0/0/0
Sortie Gen.	164	9	3/3/1/0
Vestibule	200	0	0/0/0/0
Lobby	201	20	0/0/0/0
Duty Desk	202	3	3/8/1/Copier & Equip. Items*
Corridor	203	0	0/0/0/0
Scheduling Corridor	204	0	0/0/0/0
Scheduling Common	205	1	0/0/0/Copier
Sortie Prod.	206	8	3/3/1/0
ADO	207	6	4/4/1/0
DO	208	3	1/1/0/0
Maintenance Scheduling	209	5	4/4/1/0
DOS	210	3	1/1/0/0
Storage	211	0	0/0/0/0
Flight Scheduling	212	10	9/9/1/0
Ground Scheduling	213	8	6/6/1/0
Men's Restroom	214	0	0/0/0/0
Women's Restroom	215	0	0/0/0/0
Janitor's Closet	216	0	0/0/0/0
Upper Lobby	217	0	0/0/0/0
Storage	218	0	0/0/0/0
Electrical Closet	219	0	0/0/0/0*
Communications Closet	220	0	0/0/0/0*
Secure Comm. Closet	221	0	0/0/0/0*
Toilet	222	0	0/0/0/0
Passage	223	0	0/0/0/0
Auditorium	224	202	30/0/0/0*
Control Room	225	1	1/1/0/0
Mission Planning	226	18	2/2/0/2 Projectors
Mission Planning	227	18	2/2/0/2 Projectors
Mission Planning	228	18	2/2/0/2 Projectors
Threat Library	229	4	0/0/0/0
Mission Debrief	230	20	8/8/4/Plotter, Shredder & Laminator*
Mission Planning	231	18	2/2/0/2 Projectors
Mission Planning	232	18	2/2/0/2 Projectors

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Mission Planning	233	18	2/2/0/2 Projectors
Intelligence	234	7	4/4/1/0
DOK	235	12	10/10/1/0
CDC	236	3	3/3/1/0
DOT	237	10	8/8/1/0
DOV	238	6	6/6/0/0
Flight publications Libr.	239	1	0/0/0/0
DOF	240	18	3/3/0/0
DOF A Office	241	4	2/2/0/0
DOF B Office	242	4	2/2/0/0
DOF C Office	243	4	2/2/0/0
DOF D Office	244	4	2/2/0/0
DOF Dispatch	245	1	0/0/0/0
Vestibule	246	0	0/0/0/0
Upper Corridor	247	0	0/0/0/0
Mechanical	248	0	0/0/0/0*
Heritage	249	30	0/0/0/Projector & Equip. Items* (Bar Sink, Ice Maker, Floor Sink)
Mobility	250	12	9/9/1/0
CCIM Workroom	251	2	2/2/0/0
CCIM	252	3	2/2/1/0
Toilet	253	0	0/0/0/0
Commander's Office	254	5	1/1/0/0
Conference	255	13	1/1/0/Projector
Men's Restroom	256	0	0/0/0/0
Janitor's Closet	257	0	0/0/0/0
Women's Restroom	258	0	0/0/0/0
CCQP	259	5	3/3/1/0
Copier Room	260	1	0/0/1/Copier & Fax (Sink)
Hall	261	0	0/0/0/0
Workroom	262	1	1/1/0/0
Supplies	263	0	1/1/0/0
Secretary/Reception	264	1	1/1/0/0
Waiting	265	3	0/0/0/0

* Coordinate with Government for actual equipment to be installed.

1.2.2 Design Conditions

The following conditions from the Ellsworth Air Force Base weather data file from AFH 32-1163 (1 July 2000) shall be used in designing the mechanical systems.

1.2.2.1 Site Elevation

Equipment design elevation is 3276 feet above sea level. Appropriate altitude corrections shall be made when calculating the capacity of all mechanical equipment.

1.2.2.2 Latitude

44.07° N

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1.2.2.3 Longitude

103.04° W

1.2.2.4 Heating Degree Days (annual)

7049 (65°F base)

1.2.2.5 Cooling Degree Days (annual)

738 (80°F base)

1.2.2.6 Outside Design Conditions

Winter:

- a. -11°F for outside ventilation and infiltration loads.
- b. -5°F for transmission loads.

Summer:

- c. 91°F DB and 65°F MCWB for outside ventilation and infiltration loads.
- d. 88°F DB for transmission loads.
- e. 91°F DB for air cooled equipment.

1.2.2.7 Inside Design Conditions

Winter:

- a. 70°F for all occupied areas including corridors, vestibule, toilet rooms, and janitor closet.
- b. 45°F for mechanical and electrical equipment rooms.

Summer:

- c. 78°F for all spaces including corridors, vestibule, toilet rooms, and janitor closets, unless indicated otherwise.
- d. 85°F for mechanical and electrical equipment rooms.

1.2.2.8 Minimum Ventilation Requirements

General	15 CFM of outside air per person
Offices and Data Entry	20 CFM of outside air per person
Conference Rooms	20 CFM of outside air per person
Toilet Rooms*	50 CFM per water closet or urinal exhaust (negative pressure)
Janitors' closets*	2 CFM per square foot exhaust (negative pressure)
*and at least 10 air changes per hour (ACH)	
Mech. Equip. Room	10 (ACH)

1.2.2.9 Cooling Load

Lighting	Coordinate with Electrical designer
Communications room	Coordinate with Electrical designer

Electrical equipment room

Coordinate with Electrical designer

NOTE: Communications equipment rooms and electrical equipment rooms shall be assumed 100% resistive heating.

PC/monitor

400 watts total per station

Printer

300 watts per printer

People

250 btuh/person sensible and 200
btuh/person latent (moderately
active office work per ASHRAE
Handbook of Fundamentals)

Solar, Infiltration, Trans., etc.

ASHRAE Handbook of Fundamentals

NOTE: Ventilation system design shall result in an air change effectiveness (E) greater than or equal to 0.9 as determined by ASHRAE 129-1997.

1.2.2.10 Heating Load

To be determined

1.2.2.11 Building Pressurization

The entire building shall be pressurized to reduce radon infiltration in accordance with EPA "Model Standard and Techniques for Control of Radon in New Residential Buildings".

1.2.2.12 Non-structural

Attach interior ceiling mounted fixtures to the supporting structural system (i.e., use seismic detailing from Technical Instruction 809-4) in structures. This includes mechanical equipment, ducting, and piping.

1.2.3 Mechanical Equipment Room Layout Requirements

The mechanical equipment room layouts shall be provided with ample floor space to accommodate routine maintenance of equipment and have head-room to accommodate required equipment. Ample space shall be provided around equipment to allow unobstructed access for entry, servicing, and routine maintenance. Space provided in rooms for service and/or replacement of filters, coils, motors, and other equipment items shall be indicated with broken (dashed) lines and dimensioned on the drawings. Provisions for installation, removal, and future replacement of equipment shall be coordinated with the architectural design. The as-built drawings shall be in accordance with Section 01040, AS-BUILT DRAWINGS. The arrangement, selection, and sizing of all mechanical equipment shall be such that it can be broken down and removed from the building without dismantling any adjacent systems or structures. Doors shall be located to facilitate other requirements and shall be accessible from outside the building. A 60 percent design submittal shall be provided to verify mechanical equipment room layout.

1.2.4 Mechanical/Electrical Equipment Coordination

Arrangement of all mechanical equipment and piping shall be coordinated with electrical work to prevent interference with electrical conduits that may run through the mechanical equipment room and to insure adequate space in shared chases. Clearances required by NFPA 72 above and in front of

electrical panels and devices shall be maintained. Mechanical equipment (pipes, ducts, etc.) shall not be installed OVER OR WITHIN SPACE which is dedicated to transformers, panelboards, or other electrical equipment unless items solely serve the area. When electrical equipment is located in a mechanical equipment room, the dedicated electrical space shall be indicated by a dashed line and noted "Electrical Equipment Space".

1.2.5 General Mechanical Requirements

As applicable, the following shall be provided for all new mechanical systems:

- a. All piping and equipment located in finished areas of the building shall be concealed or furred-in; exposed piping and equipment is only allowed in utility, equipment, storage and other rooms of this nature.
- b. All pumps, regardless of service, shall be non-overloading allowing the pump to operate at any point in its characteristic curve.
- c. All vents, drain valves, and strainers which are located out of mechanical equipment room spaces shall be provided with hose-end connections. All automatic air vents shall be piped to the glycol feeder tank. All drain valves, and strainers which are located within mechanical equipment room spaces shall be piped to the nearest floor drain.
- d. Pipe taps, suitable for use with temperature or pressure probe, shall be located at each pressure gauge.
- e. Provide isolation valves, balancing valve/flow measuring device, and pressure/temperature test taps at all heating and/or cooling units, pumps, chillers, fan coils and hot water unit heaters.
- f. All coils shall be provided with valved drain and air vent connections.
- g. A thermometer shall be installed on the supply and return piping to/from each coil (not applicable to reheat coils). Thermometers shall be legible to service mechanics standing at ground level. Temperature/pressure taps shall be provided on the supply and return piping of each coil.
- h. Strainers shall be provided with a drain valve.
- i. Provide bypass piping with a balancing (globe, ball, or butterfly) valve around all non-redundant control and regulating valves (not applicable to reheat coils).
- j. Water and natural gas service lines shall be metered where they enter the building and buried with pipe detection tape.
- k. All underground metallic lines, fittings, and valves; except for cast-iron soil and storm drain piping systems, shall be cathodically protected in accordance with Section 01007 ELECTRICAL REQUIREMENTS, paragraph entitled "Cathodic Protection".
- l. All exterior, underground non-metallic piping shall be buried with pipe detection tape and tracer wire.
- m. All pipe, ductwork, and equipment supports and hangers shall be coordinated with the structure design to avoid possible overloading of any structural elements.
- n. Air vents shall be installed on all high points in piping systems. Drain valves shall be installed at all low points and at equipment which must be dismantled for servicing.
- o. All butterfly valves shall have spool pieces upstream and downstream so that the disk can not enter any adjacent fitting.
- p. Except at pump intake connections, eccentric reducers shall not be used.

- q. Where steel flanges mate with cast-iron flanges, provide flat faces and full face gaskets.
- r. Piping and supports shall not interfere with equipment maintenance access or pull space.
- s. Dielectric unions shall be installed between dissimilar metals in soldered and threaded piping systems and insulated flanges shall be installed for welded systems.
- t. Mechanical Room floor shall be provided with drain(s) with floor sloping toward drain(s). Drain(s) shall discharge to sump with manually operated sump pump.

1.2.6 Roof Mounted Equipment

Except for gas vents, plumbing vents, and boiler flue stacks, no mechanical equipment shall be located on the roof of the facility. All such equipment shall be located on west sloping roofs. No roof-mounted items are allowed on the sloped roof areas east of the roof ridge line.

1.2.7 Vibration Isolation/Equipment Pads

Provide vibration isolation devices on all new floor mounted or suspended mechanical equipment. All new floor mounted mechanical equipment shall be provided with 6 inches thick housekeeping pads which extend 6 inches all around equipment provided.

1.2.8 Maintenance Instrumentation

Provide sufficient and permanently installed instrumentation to aid maintenance personnel in balancing and/or troubleshooting mechanical systems. Instrumentation shall be provided in the media at each change in temperature and at all mixing points in air handling systems. Pressure gauges, thermometers, flow indicators, sight glasses, etc., shall be installed to be easily read from the adjacent floor. A single pressure gauge with necessary gage cocks shall be installed on both the suction end and discharge end of pumps. Provide an isolation valve/gage cock on all lines to pressure gauges. Thermometers shall have separable socket thermowells. Allow for the removal, repair, or cleaning of flow measuring devices without having to shut down the system. Provide a portable meter, with appropriate range, for each type of flow measuring device installed.

1.2.9 Control Instrumentation

Temporary instrumentation shall be provided for the field calibration of all control and monitoring devices, and for the commissioning of the mechanical systems. Provide local indication measuring instrumentation for each of the HVAC control system components. Local instruments are to be independent of sensing devices used for the control system. The exceptions are air flow measuring stations, turbine flow meters, pitot tubes, and other flow measuring devices that may be shared as sensing devices by local indicating devices and control system devices and are required to be permanent. Local instruments are to be of industrial quality, must be certified as being factory calibrated, and must be capable of field calibration using standard procedures. Measuring provisions shall be provided at each varying input and control output in the system.

1.2.10 Utility Interruptions

Certain limitations on utility interruptions apply. Unauthorized utility interruptions will not be permitted. Any work that requires a utility interruption shall be scheduled in advance. Outages are subject to postponement or cancellation by site authorities without prior notification. Coordination requirements of utility interruptions shall be in accordance with Section 00800 SPECIAL CONTRACT REQUIREMENTS. All utility interruptions shall be identified with notes on the project drawings.

1.2.11 Power Outage Start-Up

Upon an electrical power outage, all air handling units, pumps, and other major mechanical equipment will shut down and shall be restarted without intervention by EMCS personnel in a logical and efficient manner. Timing between starts and sequence of equipment starting upon restoration of electrical power shall be provided and programmed into the HVAC temperature control system, with programming capable of being changed by the operating personnel.

1.2.12 Redundancy

Redundancy shall be as contained in this document and supplemented by other furnished criteria.

1.2.13 Spare Parts Lists

Proprietary spare parts lists that require more than a 60 day lead time, and/or any special service tools shall be provided to the Government prior to acceptance of the system.

1.2.14 Equipment Room Diagrams

The following "As-Built" information, permanently mounted in a frame and covered by clear plexi-glass, shall be provided in the mechanical equipment rooms:

- a. Air distribution diagrams and damper schedules.
- b. Hot water piping diagrams and valve schedules.
- c. Chilled water piping diagrams and valve schedules.
- d. Control diagrams, control device schedules, and sequences of operation.

1.2.15 Color Coordination - Interior Design

All mechanical items located in finished areas and on exterior walls, shall be coordinated with and painted to match the color scheme requirements of UFGS Section 09915 COLOR SCHEDULE.

1.2.16 Antiterrorism/Force Protection

Antiterrorism/Force Protection shall follow "Department of Defense Antiterrorism Construction Standards."

- a. Include an emergency shutoff switch in the control system that immediately shuts down the heating, ventilation, and air conditioning (HVAC) system.

- b. Secure exterior access to gas mains, water supplies service, or other support facilities or infrastructure.

Additional Bioterrorism Countermeasures are mandated by the Air Combat Command (ACC).

- a. All new HVAC systems with fresh air intakes shall be designed with such intakes located closer to the high part(s) of the facility, rather than near ground floor levels (below 8-feet above finished grade).
- b. Roof-mounted fresh air intakes are recommended only when wall intakes are not technically feasible. Their use, on sloped roof construction, shall be limited to the rear, or less visible side of the roof, and to where standing water will not exist. Wherever possible, louvers are to be located with their bottom edges at or above 10 feet above the ground.
- c. In order to preclude direct access to interior ductwork, design of new facilities shall ensure that fresh air intakes have heavy-gauge expanded metal exterior coverings outside their wind / rain louvers. Expanded metal shall be: 16-gauge minimum; diamond shaped; with 1-inch, maximum, openings. These expanded metal covers shall be installed over the outside of the louvers.
- d. Fresh air intakes shall include an integral filter. Integral filters shall be a 30% filter, of the pleated throw-away type, unless system performance mandates a different filter efficiency. This filter is not the additional filter, normally included with air-handling units.
- e. All new HVAC system construction shall include a direct digital control (DDC) system to enable the system manager or technician automatically to shut down critical components, as well as to close outside air dampers if a possible chemical or biological agent has been introduced into the HVAC system.

1.3 EQUIPMENT IDENTIFICATION AND ABBREVIATIONS

This section contains requirements for the identification and abbreviation of mechanical equipment.

1.3.1 Equipment Identification

Provide a brass name tag for each valve, temperature control device, control system device (including but not limited to sensors, controllers, etc.), etc., installed in all mechanical systems. In addition, all mechanical equipment shall be clearly identified with a conspicuously located, permanent label. Mechanical equipment shall be identified by type and sequence number. For example, the air-handling unit in the building shall be identified as AHU-1, the first hot water pump shall be HWP-1, the second hot water pump shall be HWP-2, etc.

1.3.2 Abbreviations

The following list of abbreviations shall be used to describe the HVAC and plumbing equipment types:

Air Dryer	AD
Air Handling Unit	AHU
Air Separator	AS
Building Control System	BCS
Boiler	B
Cabinet Unit Heater	CUH
Chilled Water Pump	CWP
Chiller	CLR
Control Air Compressor	CAC
Control Valve	CV
Domestic Water Heater	DWH
Domestic Hot Water Pump	DHWP
Electric Unit Heater	EUH
Exhaust Fan	EF
Expansion Tank	ET
Fan Coil Unit	FCU
Filter Bank	FB
Fin Tube Radiation	FTR
Gov't Furnished Contractor Installed	GFCI
Gov't Furnished Gov't Installed	GFGI
Horizontal Unit Heater	HUH
Hot Water Pump	HWP
Louver	L
Local Control Panel	LCP
Motor Operated Damper	MOD
Not in Contract	NIC
Heating Coil	HC
Reheat Coil	RHC

Relief Hood	RH
Supply Fan	SF
Transfer Fan	TF
Unit Heater	UH
Variable Air Volume Terminal Unit	VAV
Vertical Unit Heater	VUH

1.4 IDENTIFICATION OF PIPING

All exposed and concealed piping in accessible spaces shall be identified with color coded bands and titles.

1.5 SEISMIC PROTECTION FOR MECHANICAL PIPING AND EQUIPMENT

This Section contains instructions and engineering requirements relating to the seismic protection design of new mechanical piping, ductwork, and equipment. The facility is to be considered a Special Occupancy Structure, Seismic Use Group II, Seismic Design Category A, as indicated in Section 01005 STRUCTURAL.

1.5.1 Piping

Piping within the facility, except fire protection piping, is not required to have seismic restraints. All water pipes for fire protection systems shall be designed under the provisions of the current issue of the "Standard for the Installation of Sprinkler Systems" of the National Fire Protection Association NFPA 13, see Section 01008 FIRE PROTECTION REQUIREMENTS.

1.5.2 Ductwork

Ductwork within the facility, is not required to have seismic restraints.

1.5.3 Floor Mounted and Suspended Equipment

Suspended equipment within the facility shall be restrained with adequate sway bracing to prevent lateral and longitudinal movement. Floor mounted equipment shall be provided with adequate anchorage and restraints for spring mounted equipment to prevent lateral and longitudinal movement.

1.5.4 Miscellaneous Equipment

Miscellaneous items, which consist of a number of individual components built into an assembly by the manufacturers, may require additional internal reinforcements.

1.6 THERMAL INSULATION OF MECHANICAL SYSTEMS

Insulation requirements of mechanical systems, including insulation of plumbing systems and equipment, hot water piping systems and equipment, chilled water piping systems and equipment, and the insulation of the duct systems shall meet the requirements of ASHRAE 90.1. Cold piping, duct, and equipment shall have a vapor barrier. Exposed piping shall have aluminum

jacket such as janitor closets, etc. Exterior chilled water piping shall have an aluminum jacket. As a minimum, the following shall be insulated:

1.6.1 Above Ground Cold Pipelines:

- a. Domestic cold water
- b. Make-Up Water for hydronic heating and cooling systems
- c. Refrigeration suction lines
- d. Chilled water
- e. Air conditioning condensate drains
- f. Exposed lavatory drains.

1.6.2 Above Ground Hot Pipelines:

- a. Domestic hot water supply and re-circulating systems
- b. Heating hot water

1.6.3 Duct Insulation:

Where acoustical duct liner is used, as described in para. 1.12.13 below, liner, or combination of liner and insulation applied to exterior of ductwork shall provide the thermal equivalent of insulation per ASHRAE 90.1.

- a. Supply duct
- b. Return duct in mechanical rooms and in other unconditioned spaces
- c. Relief and exhaust ducts in mechanical rooms and in other unconditioned spaces
- d. Outside air duct
- e. Combustion air intake duct

1.6.4 Cold Equipment

- a. Chilled water pumps
- b. Refrigeration equipment parts not factory insulated
- c. Air handling equipment parts not factory insulated
- d. Expansion and air separation tanks.

1.6.5 Hot Equipment

- a. Heating water pumps
- b. Unjacketed parts of boilers
- c. Air separator tanks.

1.6.6 Insulation Covers

Provide reusable insulation covers at all check valves, control valves, strainers, filters, or any other piping component requiring access for routine maintenance. Insulation exposed to weather or physical damage shall be covered by aluminum metal jackets. All piping with metal jackets shall be identified on the drawings.

1.7 PLUMBING SYSTEM

This Section contains instructions and engineering requirements relating to the design of the new plumbing systems. The plumbing systems consist of the domestic hot and cold water supply distribution system to the various plumbing fixtures; make-up water piping to the various hydronic environmental control systems (i.e., expansion tanks, boilers, etc.); fixtures, and fixture traps; soil, waste, and vent piping. Plumbing piping shall extend from connections within the structure to a point 5 feet outside the structure. The

design of all plumbing systems shall, unless otherwise stated herein, comply with the most current International Plumbing Code. For Fire Protection backflow preventer requirements see Section 01008 FIRE PROTECTION REQUIREMENTS.

1.7.1 Water Service Entrances

New water service entrance line shall be installed below the recognized frost line, and shall enter the building through the mechanical room floor. Water service entrance shall be provided with a positive displacement type water meter, up to and including 2-inch service entrance, or a turbine type water meter, for greater than 2-inch service entrance. Water service shall also include a reduced pressure principal backflow preventer, with isolation valves, and a separate isolation valve located upstream of the backflow preventer and water meter, located inside the building. Meter shall be provided with a direct non-resettable, digital readout. Meter shall have a pulse switch initiator capable pulse output of operating up to speeds of 500 pulses per minute with no false pulses and shall require no field adjustments or 4-20 mA output. Initiators shall provide the maximum number of pulses up to 500 per minute that is obtainable from the manufacturer. Meters shall be connected to the EMCS system.

1.7.2 Piping Runs

Piping runs in buildings shall be arranged to not interfere with movement of personnel and equipment. Neither water nor drainage piping shall be located over electrical equipment or panels. Domestic water piping located outside of mechanical equipment areas shall be routed in the ceiling space above the corridors, wherever possible. Water and waste piping shall not be located in exterior walls or other spaces where there is danger of freezing. Where piping is to be concealed in wall spaces or pipe chases, such spaces shall be checked to insure that clearances are adequate to properly accommodate the piping. Water piping shall be designed not to exceed a velocity of 7.5 feet per second at full flow.

1.7.2.1 Piping for Miscellaneous Equipment

Provide piping stub-up for miscellaneous equipment such as ice makers or beverage dispensers where the equipment is not part of this Project. Provide with isolation valve. Coordinate pipe size with equipment connection size.

1.7.3 Pipe Materials

- a. Above grade domestic water pipe shall be hard-drawn Type L copper.
- b. Below grade domestic water pipe shall be hard-drawn Type L copper.
- c. Below grade sanitary waste piping shall be ASTM A 74 cast iron hub and spigot soil pipe, with CISPI HSN-85 neoprene rubber compression gaskets.
- d. Above grade sanitary waste and vent piping shall be ASTM A 888 cast iron hubless soil pipe, with CISPI 310 stainless steel couplings.
- e. Compressed air piping shall be steel, seamless or ERW conforming to ASTM A53, Grade B or ASTM A106, Grade B, Schedule 40 with threaded joints and malleable iron fittings.

1.7.4 Protection of Water Supplies

Cross connections between water supply piping and waste, drain, vent, or sewer piping are prohibited. Reduced pressure type backflow preventers shall be provided on all make-up water systems. All backflow preventers shall be installed for accessibility per International Plumbing Code and the American Water Works Association. State licensed plumbers shall install and/or test backflow preventers and cross connections devices.

1.7.5 Exposed Traps

Exposed traps for lavatories, and sinks shall be chromium-plated, adjustable-bent tube, 18-gauge brass minimum.

1.7.6 Plumbing Fixtures

Plumbing fixtures shall meet the operational and dimensional requirements of ANSI/ASME A 112.19.2M and shall be provided with cast brass trim and individual stop valves. Plumbing fixtures shall conform to ASME standards and Executive Order 12902 with lead-free faucets. Lead-free faucets shall meet the requirements of NSF 61, Section 9. Work shall consist of but not be limited to the following. Coordinate location and quantity with the architectural plans.

a. Water Closets

Water closets shall be wall hung vitreous china with ASSE 1037 water conserving siphon jet flushometer valves (1.5 gallons per flush), and electronic controller for automatic flushing.

b. Urinals

Urinals shall be wall hung vitreous china with ASSE 1037 water conserving siphon jet flushometer valves (1.0 gallons per flush), and electronic controller for automatic flushing.

c. Lavatories

Lavatories shall be integral with countertop and of solid polymer construction, oval shaped, with grid drain outlet, offset p-trap, and water conserving (0.042 gallons per second at a pressure of 80 psi), with electronic controller for automatic on /off.

d. Kitchen Sinks

Kitchen sinks shall be stainless steel ASME A112.19.3M single bowl, with plug, cup strainer, retractable spray nozzle, single control mixing faucet, and water conserving. (0.042 gallons per second at a pressure of 80 psi).

e. Janitors Closet Sinks

An enameled cast iron ASME A112.19.1M corner floor mounted type service sink shall be provided in all janitor closets. Overall sink dimensions shall be approximately 28 inches x 28 inches. The depth of the floor sink bowl shall be approximately 10 inches.

f. Electric Water Coolers

Electric water cooler shall be surface wall mounted, bi-level, handicap accessible (barrier-free), stainless steel, mechanically refrigerated units, with part of each suitable for use by the physically handicapped. Cooler shall be lead-free in conformance with Section 9, NSF 61 and use CFC-free refrigerant R-134a. Unit shall provide a minimum of 0.13 gallons/s at 50 degrees F.

1.7.7 Plumbing Specialties

a. Water Hammer Arresters

Commercially available water hammer arresters shall be provided at all quick closing valves such as solenoid valves and will be installed according to manufacturers recommendations. Vertical capped pipe columns shall not be permitted.

b. Wall Hydrants

Freeze-proof wall hydrants with vacuum-breaker backflow preventers shall be located on exterior walls of the facility at no more than 100 foot intervals, and shall be mounted 24 inches above finished grade. A freeze proof wall hydrant shall be provided near boiler room.

c. Wall Faucets

A wall faucet with vacuum-breaker backflow preventer shall be provided inside of all mechanical rooms and fan rooms, and shall be mounted 36 inches above the finished floor.

d. Service Stop Valves

Angle stops, straight stops, stops integral with faucets, or concealed type of lock-shield, and loose-key pattern stops for water supplies shall be provided for all fixtures.

e. Isolation Valves

Valves shall be provided for domestic water piping to isolate portions of system, to allow maintenance and repair without shutting down the entire system. As a minimum, domestic water isolation valves shall be required for all branch lines serving each plumbing fixture group. Isolation valves shall be shown on drawings.

f. Floor Drains

Floor drains shall be provided in all mechanical rooms, toilet rooms, restrooms, janitors closets, below all electric water coolers (EWC's), at refrigerated vending machines, and at ice-making machines. In addition, floor drains shall be provided in the following rooms: Training Room 122, Pump Room 133, Wash Room 135, Tool Storage Room 138, General Storage Room 141, Mobility Storage Room 144. To prevent traps from drying out, deep seal traps shall be provided on all floor drains.

g. Cleanouts

Cleanouts shall be same size as pipe up to and including 8 inches. Cleanouts shall be provided at each change of direction of pipe and shall be provided at the base of all storm, soil, waste, and vent stacks.

h. Hand-held spray faucet/wash nozzle shall be provided in AC Room 133.

1.7.8 Plumbing Vents

Where feasible, combine circuit vents in a concealed space to a main vent through the roof in lieu of an excessive number of individual vents through the roof. All vent lines through roof shall be 4 inches and terminate a minimum of 6 inches above finished roof. Where vents connect to horizontal soil or waste lines, the vent shall be taken off so that the invert of the vent pipe is at or above the centerline of the horizontal soil or waste pipe.

1.7.9 Duct Drainage

Outside air intake louvers shall be ducted and shall have provisions to dispose of melted snow and wind-blown rain, entering through louvers. Duct seams shall be sealed watertight (brazing is not required) and a drain provided at low point of duct. The drain shall be routed to a floor drain. Duct access doors shall be provided near the louvers.

1.7.10 Domestic Hot-Water

Two domestic water heaters shall be provided. One shall be located in the boiler room and one shall be located in the fan room serving the west wing. Each water heater shall be gas fired storage type conforming to ANSI Z21.10.1 for units with input of 76,000 btuh or less, and ANSI Z21.10.3 for units with input greater than 76,000 btuh. The capacity of the water heaters shall be adequate to meet the peak hot water requirements of the facility and shall be designed in accordance with Chapter 48, Service Water Heating, of the 1999 ASHRAE HVAC Applications Manual. An inlet water temperature of 40 degrees F. shall be used for sizing the water heater. Minimum efficiency shall be 80 percent. Water storage temperature shall be approximately 120 degrees F to prevent bacterial growth within the tank.

a. Domestic Hot Water Re-circulation System

Domestic hot water re-circulating pumps and piping shall be provided for each water heating system. Pump sizing shall be in accordance with simplified pump sizing method 1995 ASHRAE Applications Manual, unless specific conditions warrant the need for more detailed calculations. The system shall continually circulate domestic hot water in order to insure that domestic hot water is available at each fixture without delay. The domestic hot water re-circulating pumps shall be all bronze for long life.

b. Domestic Water Heater Vents

Domestic water heater vents shall be type "B", and shall conform to UL 441. Boiler stacks and domestic hot water vents shall not be tied together. Height of vents shall be as required by NFPA 54 and shall be provided with a rain cap.

1.7.11 Air Compressors

Packaged system including duplex electric mixer motor driven compressors mounted on air receiver tank. System shall be rated for operating pressure of 150 psig. System shall include pressure switch for automatic start backup compressor; outlet pressure regulator; safety valve set at pressure lower than receiver tank design pressure and with capacity at set pressure greater than maximum output of compressors; automatic condensate drain. Compressor system shall be sized to meet the peak compressed air requirement with one (1) compressor operating 1/3 ON - 1/3 OFF.

1.8 EXTERIOR GAS DISTRIBUTION SYSTEMS

This Section contains instructions and engineering requirements relating to the design of the new exterior natural gas distribution system where required, including the building gas service lines and gas service regulator assemblies. The gas distribution systems shall be designed in accordance with NFPA-54, AFM 88-12 Chapter 1, or TM 5-848-1.

1.8.1 Service Lines

a. A new service line shall be provided and connected to the existing 2 inch distribution line that is located as shown on contract drawings. Extend the new line from tap point, as indicated on contract drawings. The tap into the existing line shall be a "hot tap" and the Base Fire Department shall be given 30 days advance notification of the date of the tap (see minimum service line sizing paragraph Service Line Sizing). The point of connection shall be provided with a shutoff plug valve, conveniently located outside of any traffic area and protected with a valve box. Service lines shall not be installed under or routed thru the facility. Except for piping located at the new gas meter/service regulator assemblies, no aboveground gas piping shall be exposed to view. The service line shall enter the buildings in an accessible location outside the boiler room. The gas meter/service regulator assemblies shall be hidden from view to the greatest extent possible.

b. Service lines to buildings shall run parallel and/or perpendicular to the building lines, shall be buried at least 18 inches below the ground surface, shall not be laid in the same trench with other utilities, and shall be above other utilities whenever they cross. Gas lines shall not be laid under paved streets, parking lots, roads or in other locations subject to heavy traffic whenever practicably avoidable and economically feasible to locate elsewhere. Whenever it is necessary to locate gas lines in such locations, the lines shall be protected by suitable encasement or by burying to a depth to provide at least 48 inches of cover over the top of the pipe. Gas lines shall be provided with encasement when laid under new or existing paved streets, and parking lots.

1.8.2 Service Line Sizing

The size of the service lines shall be sufficient to supply the demand without excessive pressure drop and shall not be less than 1 inch in size.

1.8.3 Service Line Materials

All new underground service lines shall be polyethylene and all aboveground lines shall be steel.

1.8.4 Service Line Markers

New underground service lines shall be identified by a permanent on-grade utilities marker which indicates the type of service and depth of burial. Markers shall be located a maximum of 100 feet apart on straight runs and at

every change in direction. Markers in high traffic areas shall be protected from physical damage. Markers shall consist of a stamped or engraved brass name plate embedded in concrete.

1.8.5 Service Line Protection

All new below grade lines shall be protected from physical damage by placing a continuous, detectable plastic ribbon and tracer wire in the trench. Plastic ribbon shall be located such that any excavation will uncover the ribbon prior to reaching the below grade line.

1.8.6 Gas Meters

A new gas meter shall be provided as part of the new service regulator assemblies. Meters shall be provided with a direct non-resettable, digital readout. Meters shall have a pulse switch initiator capable pulse output of operating up to speeds of 500 pulses per minute with no false pulses and shall require no field adjustments or 4-20 mA output. Initiators shall provide the maximum number of pulses up to 500 per minute that is obtainable from the manufacturer. It shall provide not less than one pulse per 100 cubic feet of gas. Meters shall be connected to EMCS.

1.9 INTERIOR GAS PIPING SYSTEMS

This Section contains instructions and engineering requirements relating to the design of new interior natural gas piping systems. Interior gas piping systems shall extend from the outlet of the gas service regulator/meter assembly to the point of connection of each gas utilization device. The aboveground gas piping system shall be steel designed in accordance with NFPA 54.

1.9.1 Gas Piping

Piping shall be sized in accordance with NFPA 54 to supply the demand without excessive pressure drop between the point of delivery and the gas utilization equipment. Minimum interior gas pipe size shall be $\frac{3}{4}$ inch. The calorific value of the natural gas to be used in calculations for sizing equipment and piping is 880 btu per cubic foot.

1.9.2 Equipment Connections

The final connection to gas equipment shall be made with rigid metallic pipe and fittings. Accessible gas shutoff valve and coupling are required for each piece of gas equipment.

1.9.3 Gas-fired Heating

The use of gas-fired heating units shall be limited to infrared radiant heating systems for high bay areas.

1.10 HEATING WATER SYSTEM

1.10.1 General System Configuration

Two gas fired, three pass, forced draft, firetube boilers arranged in parallel shall generate heating water to satisfy the building heating requirement. The boilers shall be equipped with modulating burners, shall

have a 50 psi working pressure, and shall be sequenced from a packaged boiler master plant controller. There shall be a heating water circulation pump per boiler, and two distribution pumps arranged in parallel. Pumps shall be sized for 100% boiler capacity each and controlled in a lead/lag arrangement. The boiler circulation pumps shall be base mounted, end suction, centrifugal types, with constant volume drive motors. The heating water distribution pumps shall be base mounted end suction, centrifugal types, with variable frequency drive motors. The heating water shall be a 50% glycol/ 50% water mixture. The glycol/water mixture shall be maintained by a manual glycol feed system.

1.10.2 General piping configuration

The heating water piping system shall be in a primary/secondary configuration; divided by a de-coupling bypass line, into a distribution loop and a production loop. Water temperature reset based on outdoor air temperature shall be provided for the distribution loop. The heating water valves on the baseboard heaters, most of terminal unit heating coils, and the heating coils in the air handling units shall be configured for variable flow with two way valves. The heating water coils on the most remote air handling unit, and the heating water coils on the most remote terminal unit heating coils shall be configured for constant volume flow with three way valves, so that the variable frequency drive on the lead distribution heating water pump motor will not drop below 25% of the maximum drive frequency.

1.10.3 Distribution Loop Piping Configuration

The distribution loop shall be configured using automatic flow control valves at each coil, to enable the system to be properly balanced. The heating water distribution piping shall run above the first floor and second floor corridor ceilings.

1.10.4 Miscellaneous Baseboard Heating

Separately controlled baseboard heating units with manufacturer's standard steel, slope top cabinets.

1.10.5 Unit Heaters

The Boiler Room and fan rooms shall be heated by propeller type, heating water unit heaters. Each vestibule shall be heated by a wall-mounted heating water cabinet unit heater. Unit heaters shall cycle to maintain a 55°F space heating set point. The Boiler Room unit heater airflow shall be directed toward the combustion air openings in order to warm the combustion air.

1.10.6 Pump Control

The boiler circulation pumps shall start and stop with their respective boilers. A flow switch in the heating water return line to each boiler in the production loop shall allow the boiler to fire, only after flow has been established through the boiler. The variable frequency drives on the heating water distribution pumps shall modulate in response to a differential pressure sensor across the supply and return mains in the distribution piping. The differential pressure sensor shall be located at least 2/3 down

the reverse return distribution loop from the heating water distribution pumps. The heating water distribution pumps shall be controlled to run in a lead-lag configuration when the outdoor air temperatures is below 65 °F, so that only the lead pump will operate if it can satisfy the system demand. The lead-lag shall be controlled through the DDC software to rotate the lead-lag pumps monthly, and to automatically start the lag pump and alarm if the lead pump fails during operation, or fails to start after a programmed amount of time on start up.

1.10.7 Boiler Sizing

Each boiler shall be sized for 67% of the calculated heating load, plus 15% for piping heat loss and 10% for a safety factor.

1.10.8 Pump Sizing

Each of the boiler circulation pumps shall be sized to handle 100% of capacity of the boiler served. Each of the distribution heating water pumps shall be sized to handle 100% of the total system flow and 100% of the maximum system pressure. All pumps sizing shall be based on a supply water temperature of 180 °F and a return water temperature of 160 °F.

1.10.9 Pump Configuration

All pumps shall be non-overloading, allowing the pump to operate at any point on its characteristic curve. Each pump shall be provided with a suction diffuser, stainless steel mesh flexible connector, and isolation valve on the pump suction. Each pump shall be provided with a stainless steel mesh flexible connection, check valve, calibrated bronze balancing valve, and isolation valve on the pump discharge. Each pump shall be mounted on a 6 inch thick concrete housekeeping pad. Housekeeping pad shall extend beyond pump base a minimum of 4 inches on each side.

1.10.10 Boiler Control

The lead boiler shall be energized in response to a system demand. After an adjustable time delay, to allow the boiler firing sequence to elapse, the controller shall begin modulating the lead burner upward from the ignition starting point at a rate proportional to the system temperature rate of change and the gain setting. At a field selected percent modulation, if more capacity is required, the lag boiler shall be energized. The lag boiler shall begin modulating at the ignition start point, after a time delay, and proceed according to system rate of change and gain setting. As the system temperature rises, control shall decrease the modulation of the lag boiler so as not to over shoot the set point. Once the lag boiler has been modulated down to it's ignition start point, it shall be held there while the lead boiler's modulation is reduced. The lag boiler shall not be de-energized until the lead boiler's modulation has dropped below it's modulation start point. Packaged master plant boiler controller shall be provided by the boiler manufacturer.

1.10.11 Boiler Connections

a. General

Design of boiler connections and auxiliary equipment shall conform to the

requirements of ASME Boiler Code.

b. Low-Water Cutoffs

Float-type safety water feeders with low water cutoffs shall be provided for the hot-water boilers.

c. Water Column Connections

Provide crosses at right-angle turns on water column connections to boiler.

d. Smoke Connection

Boiler flue stack connections shall be in accordance with NFPA 211.

1.10.12 Boiler Location

The boilers, heating water pumps, the glycol feed unit equipment shall be located in the boiler room.

1.10.13 Expansion Tanks

A bladder type expansion tank shall be provided in the heating hot water piping system. The expansion tank piping shall include an anti-thermal siphon loop, an automatic air vent, a pressure gauge, and a hose end drain valve at low point of piping.

1.10.14 Air Separation Tanks

The heating water piping system shall be provided with an air separation tank. The air separation tank shall be located in the production loop. The air separator shall include an automatic air vent and strainer.

1.10.15 Water Treatment Systems

Provide a chemical shot feeder across the suction and discharge of the heating water distribution pumps to allow introduction of chemicals into the system.

1.10.16 Piping

All piping shall be pitched up in the direction of flow, shall be designed without pockets, which would permit accumulation of air, and shall be provided with vents at high points and drains at low points. Piping located outside of mechanical equipment areas shall be routed in the ceiling plenum, or in pipe chases.

a. Pipe Materials

Heating water piping within the facility shall be Type L copper conforming to ASTM B 88 for piping 2 inches and smaller. Heating water piping 2 1/2 inches and larger shall be Schedule 40 black steel conforming to ASTM A53.

b. Pipe Joints

Heating water piping 2 inches and smaller shall be connected with wrought-copper fittings and soldered or brazed joints.

(1) Heating water piping 2 1/2 inches and larger installed within the facility shall be connected with flanged or welded joints. Grooved mechanical joints shall not be allowed.

(2) Connections to equipment shall be made with unions for pipe smaller than 2 1/2 inch and flanges for pipe 2 1/2 inch and larger.

c. Pipe Expansion

Provide expansion loops, offsets, pipe guides, and anchors, where required, and show on drawings, to accommodate thermal pipe expansion. Do not use expansion joints in piping unless absolutely necessary and justified. Anchors and guides shall be indicated on the project drawings and detailed for installation in the building structure.

1.10.17 Boiler Stacks

Boiler stacks shall be stainless, double walled, positive pressure type with insulation between inner and outer wall, and shall be in accordance with NFPA 211. Stack heights shall be as required by NFPA 54. Stacks shall be provided with a rain cap.

1.10.18 Boiler Room Floor Drains

All Mechanical Room floor drains which are designed to have routine flow from equipment condensate lines shall be located and designed in such a manner as to prevent all other sources of liquid from entering it. Remainder of Boiler Room floor shall be sloped away from boilers to a common trench drain of sufficient capacity to contain the maximum anticipated spill from the largest boiler. The outlet of the trench drain shall be through a low point sump through a lockable 2-ball type valve. Valve and lock shall be located in a separate, dry and accessible section of the trench drain. Trench drains shall be located away from equipment and shall not impede movement of personnel or equipment into the Mechanical Room.

1.11 REFRIGERATION/CHILLED WATER SYSTEMS

1.11.1 General System Configuration

a. Chilled Water

A single air cooled, rotary screw chiller shall generate chilled water to satisfy the building cooling requirement. There shall be a chiller circulation pump, and one chilled water distribution pump. The chiller circulation pump shall be a base mounted, end suction, centrifugal type, with a constant volume drive motor. The chilled water distribution pump shall be a base mounted end suction, centrifugal type, with a variable frequency drive motor. Chilled water shall be a 30% glycol/ 70% water mixture. The glycol/water mixture shall be maintained by a manual glycol feed system.

b. Split DX systems

Each communications room shall be served by an individual split DX cooling system capable of year round cooling operation.

1.11.2 General Piping Configuration

The chilled water piping system shall be in a primary/secondary configuration; divided by a de-coupling bypass line, into a distribution loop and a production loop. The de-coupling arrangement shall allow constant volume flow in the production loop and variable flow in the distribution loop. The chilled water coils on three of the four air handling units shall be configured for variable flow with two way valves. The chilled water coil on the one of the two air handling units in the west fan room shall be configured for constant flow with a three way valve, so that the variable frequency drive on the distribution chilled water pump motor shall not drop below 25% of the maximum drive frequency.

1.11.3 Distribution Loop Sizing/Configuration

The distribution loop shall be sized to limit the velocity to 4 feet per second. The chilled water distribution piping will run above the first floor corridor ceiling.

1.11.4 Pump Control

The chiller circulation pump shall start and stop with the chiller. A flow switch in the chilled water production loop shall allow the chiller to start, only after flow has been established. The variable frequency drive on the chilled water distribution pump shall modulate in response to a differential pressure sensor across the supply and return mains in the distribution piping. The differential pressure sensor shall be located at a point in the piping system with the highest pressure drop across a coil.

1.11.5 Pump Sizing

The chiller circulation pump and chilled water distribution pump shall each be sized to handle 100% of cooling load. The chiller circulation pump shall be sized for a supply water temperature of 45 °F and a return water temperature of 55 °F. The distribution chilled water pump shall be sized for a supply water temperature of 45 °F and a return water temperature of 60 °F.

1.11.6 Pump Configuration

All pumps shall be non-overloading, allowing the pump to operate at any point on its characteristic curve. Each pump shall be provided with a suction diffuser, stainless steel mesh flexible connector, and isolation valve on the pump suction. Each pump shall be provided with a stainless steel mesh flexible connection, check valve, calibrated bronze balancing valve, and shut off valve on the pump discharge. Each pump shall be mounted on a 6 inches thick concrete housekeeping pad.

1.11.7 Expansion Tanks

A bladder type expansion tank shall be provided in the chilled water piping system. The expansion tank piping shall include an automatic air vent, a pressure gauge, and a hose end drain valve at low point of piping.

1.11.8 Air Separation Tanks

The chilled water piping system shall be provided with an air separation tank. The air separation tank shall be located in the production loop. The air separator shall include an automatic air vent and strainer.

1.11.9 Water Treatment Systems

Provide a chemical shot feeder across the suction and discharge of the chilled water distribution pump to allow introduction of chemicals into the system.

1.11.10 Piping

All piping shall be pitched up in the direction of flow, shall be designed without pockets, which would permit accumulation of air, and shall be provided with vents at high points and drains at low points. Piping located outside of mechanical equipment areas shall be routed in the ceiling plenum, or in pipe chases.

a. Pipe Materials

Chilled water piping within the facility shall be hard-drawn Type L copper conforming to ASTM B 88 for piping 2 inches and smaller. Chilled water piping 2 1/2 inches and larger shall be Schedule 40 black steel conforming to ASTM A53.

b. Pipe Joints

Chilled water piping 2 inches and smaller shall be connected with wrought-copper fittings and soldered or brazed joints

c. Pipe Expansion

Provide expansion loops, offsets, pipe guides, and anchors, where required, and show on drawings, to accommodate thermal pipe expansion. Do not use expansion joints in piping unless absolutely necessary and justified. Anchors and guides shall be indicated on the project drawings and detailed for installation in the building structure.

1.12 HEATING, VENTILATING, AND AIR CONDITIONING SYSTEMS

1.12.1 General

This Section contains instructions and engineering requirements relating to the design of the new HVAC supply and distribution systems. The design of all systems shall comply with the American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) Handbooks, and NFPA 90A. Mechanical ventilation and ventilation requirements for occupants shall provide the minimum outdoor air supply rates for occupants required by ASHRAE Ventilation Standard 62-1999. Air distribution systems shall be designed to prevent infiltration by slightly pressurizing the building. Design of variable air volume systems shall ensure proper ventilation rates at low and high system air flow by providing constant volume of outside air. Cooling shall be produced by mechanical ventilation and air conditioning. Equipment capacities and flows shall be corrected for altitude on drawings (schedules). Noise Criteria unless otherwise indicated is as follows:

- a. Administrative/Office areas = 35 NC (max)
- b. Break Areas = 35 NC (max)
- c. Conference Rooms = 35 NC (max)
- d. Lobby/Toilets/Corridors = 40 NC (max)
- e. Mechanical/Utility areas = 50 NC (max)

1.12.2 VAV Air Handling Unit Configuration and Construction

a. Configuration

Each VAV air handling unit shall be in a draw through configuration and shall include the following sections in the direction of airflow: centrifugal return fan, economizer, angled filter/mixing box, heating water coil, access section, chilled water coil, access section (length as required by manufacturer for use with plenum fan), and plenum supply fan. Air shall return into the top of the return fan section. All sections of the air handling units shall be mounted on the floor.

b. Construction

Each VAV air handling unit shall be a factory fabricated modular type and shall have physical dimensions suitable to fit space allocated to the unit for required capacity. Casing section shall be 2 inches double wall constructed of a minimum 0.05 inch galvanized steel outer casing, and a minimum 0.04 inch perforated galvanized inner casing, with corrosion resistant paint finish. Casing shall be designed and constructed with an integral structural steel frame such that exterior panels are non-load bearing. Exterior panels shall be individually removable. Removal shall not affect the structural integrity of the unit. Casings shall be provided with an inspection door in each of the follow sections: Supply fan section, access sections, filter section, return fan section. Access doors shall be insulated, fully gasketed, double wall type, of a minimum 0.05 inch outer panel and a 0.04 inch inner panel. Door shall be rigid and provided with heavy duty hinges and latches. Access doors shall be a minimum 24 inches wide and shall be the full height of the unit casing, or a minimum of 72 inches high, whichever is less. Drain pans shall be double bottom type 0.06 inch stainless steel, pitched to the drain connection, and shall be constructed water tight. When two or more coils are used, with one stacked above the other, condensate from one coil shall not flow across the face of the lower coils. Intermediate drain pans, or condensate collection channels and downspouts shall be provided, as required, to carry condensate to the unit drain pan out of the air stream and without moisture carryover. Each casing section handling conditioned air shall be insulated with not less than 2 inches thick, 1.5 pounds per cubic foot, coated fiberglass material having a thermal conductivity not greater than 0.02 Btu/hr-ft²-°F.

1.12.3 VAV Air Handling Unit Supply and Return Fan Control

Each VAV air handling unit shall supply a variable volume of primary air, at a constant/reset temperature, to the air handling system terminal units. The variable frequency drive on the supply fan shall respond to a pressure sensor in the supply duct. The pressure sensor shall be located approximately 2/3 the distance from the air handling unit to the furthest air terminal unit. The variable frequency drive shall modulate the supply fan speed to maintain

a constant pressure in the air distribution system. Airflow measuring stations in the supply duct and in the return duct shall enable the return fan to track the supply fan. The return fan shall return the supply fan airflow minus the general exhaust airflow minus airflow needed to maintain building pressurization.

1.12.4 VAV Air Handling Unit Cold Deck Reset and Damper Control

The VAV air handling unit DDC controller shall monitor all the VAV terminal unit DDC unit controllers, to enable the chilled water control valve, to reset the cold deck temperature, in order to satisfy the most demanding control zone cooling load. The VAV Air Handling Unit DDC Controller shall also monitor all the VAV terminal unit DDC unit controllers, to enable the VAV air handling unit mixed air and relief air dampers to modulate, in adjustment to primary air valves on VAV air terminal units that are allowed to fully close during unoccupied mode, as described below.

1.12.5 VAV Air Handling Unit Economizer and Damper Control

When the outside air temperature is below the cooling air supply temperature set point, the chiller shall be off and cooling shall be provided by the air side economizer. Air side economizing shall be accomplished by modulating the outside, return and relief air dampers, to maintain a constant mixed air temperature, building pressure, and minimum ventilation air quantity.

1.12.6 VAV Terminal Units, General

- a. Each temperature control zone shall be served by a thermostatically controlled VAV terminal unit with a heating coil. VAV terminal units shall be shut-off type. All VAV air terminal units shall have heating coils.
- b. All VAV terminal units shall be set to a minimum air flow set point to maintain minimum ventilation, per criteria listed.
- c. A digital input from light switch(s) or motion sensor(s) in each temperature control zone, to the VAV terminal DDC unit controller serving that zone, will be provided in each classroom and conference room. The light switch shall be used for the office space control and motion sensor for the conference rooms and classroom control. When the light switch(s) or motion sensor(s) is off, indicating no occupancy, the terminal unit will adjust to maintain the heating or cooling set back or set up space temperature set points and allow the primary air damper to close.

1.12.7 Shut Off VAV Terminal Units

Shut off VAV terminal units shall modulate the quantity of primary air supplied to the space in each temperature control zone with pressure independent controls, to maintain the cooling temperature set point. When the air valve in the shut off terminal unit closes to the minimum position required for ventilation, and the space temperature continues to drop, a control valve on the heating coil shall open and modulate to maintain the heating temperature set point.

1.12.8 Ductwork Sizing and Velocities

Supply air duct systems for medium pressure variable air volume systems shall be sized using the static regain method. All other ductwork shall be sized using the equal friction method with 0.07 inches of water column per 100 feet for supply and return ducts and 0.1 inches of water column per 100 feet for exhaust ducts. Medium pressure duct velocity shall not exceed 1500 fpm, except for in fan rooms, and chases, where medium duct velocity shall not exceed 2000 fpm. Contractor shall determine if sound attenuators in return and supply ducts to and from the air handling units are required to maintain noise criteria (NC) levels shown above. Low pressure duct velocity shall not exceed 1000 fpm. Medium pressure ductwork shall be defined as the supply ductwork in the VAV air handling systems downstream of the supply fan discharge, and upstream of the VAV terminal units. All other ductwork shall be low velocity ductwork.

1.12.9 Duct construction

All ductwork shall be constructed from galvanized sheetmetal, in accordance with SMACNA guidelines. All supply and return ductwork shall be lined with 1 inch acoustical duct liner. Acoustical duct liner shall be 1.5 lbs./cubic foot, fibrous glass designed exclusively for lining ductwork and shall conform to the requirements of ASTM C 1071, Type I or II. Ducts penetrating walls to Secure Storage, Secure Conference Room or other secure areas shall be constructed in accordance with AFI 31-401 and DoD 5200.1-R.

1.12.10 Ceiling Mounted Supply Diffusers

Ceiling diffusers shall be suitable for use in a lay-in ceiling or a gypsum board ceiling. 48 inch long linear slot diffusers shall be provided at the building perimeter zones, where parallel fan VAV terminal units and heating fan coil units are used, and in the corridors, where shut off VAV terminal units are used. All other diffusers shall be 24 inch x 24 inch, high performance louver faced diffusers. Diffusers shall be sized to distribute the required quantity of air evenly over the space intended without causing noticeable drafts, air movement faster than 50 feet per minute at occupied level, or dead air spots.

1.12.11 Ceiling Mounted Return Grilles

Ceiling return air grilles, suitable for use in lay-in ceilings or gypsum board ceilings, shall be located as necessary. The maximum size of new return grilles shall be 24 inch x 24 inch, minimum size shall be 24 inch x 12 inch. Return grilles shall not be located close to doors opening to outside or in locations where bypassing of supply air may occur. Return air velocities shall be no more than 10 feet/sec as applied to the free area of the return grille.

1.12.12 Ventilation Fans

a. General

All fans shall be centrifugal type and connected directly to weather-proof louvers using ductwork. Low leakage motorized dampers shall be provided. Fans larger than 2000 cfm in capacity shall be provided with V-belt drives. Care

shall be taken to ensure that the noise level generated by exhaust and supply fans and associated relief louvers is not transmitted to the exterior of the building. In-line fans located outside the main mechanical and electrical areas shall be provided with a manufacturers standard acoustical enclosure to inhibit noise transmission to the adjoining occupied spaces. Fan noise shall not exceed 10 sones when measured 5 feet from fan inlet, for fans located outside of the mechanical or electrical areas.

b. Toilet Exhaust

In-line fans shall be provided to exhaust air from each of the two restroom groups, including janitor's closets. Each exhaust fan shall be located above the second floor ceiling of the restroom group served, and shall discharge air through a louver in the exterior wall. Make up air for the restroom exhaust shall enter the building through the VAV air handling systems, and shall transfer into the restrooms from the adjacent corridors. The transfer shall occur through ceiling grilles in the corridors and restrooms, connected by transfer ducts sized for no greater than 5 feet/second airflow velocity. The exhaust fans shall be sequenced through the DDC control system to run during occupied hours and to stop during unoccupied hours.

c. Boiler Room and Electrical Room Ventilation

The boiler room and electrical rooms shall be provided with mechanical ventilation to remove excess heat generated by fuel burning equipment, pump motors, and electrical equipment. In-line supply fans shall be thermostatically controlled to run when the space temperature exceeds 85 °F. The inlet of each in-line fan shall be ducted to an intake wall louver sized for no more than 8 feet/second airflow velocity. An air relief louver in the adjacent wall shall be sized for no more than 16 feet per second airflow velocity. Motorized dampers in the intake and exhaust louvers shall be interlocked with the supply fan starter to open and close when the supply fan starts and stops.

1.12.13 Outdoor Intakes and Exhausts

a. General

Outdoor air intakes shall be located in areas where potential for air contamination is lowest such as away from overhead doors. Locate intake louvers closer to the upper portion of walls rather than at First Floor level. Wherever possible, locate louvers a minimum of 10 feet above grade. Roof-mounted air intakes shall only be used where use of wall-mounted louvers is not feasible. Maximize the distance between outside air intakes and exhausts by maintaining a minimum distance of 50 feet between intakes and toilet, janitor room and etc. Motorized low-leakage damper with blade and jamb seals, shall be provided at all outside air intake and exhausts. If feasible, locate intakes and exhausts on different building faces. Maximum velocity through net area of air intakes shall be limited to 8 feet/second.

b. Protection

Outdoor air intake louvers and exhaust louvers shall be constructed as follows, to reduce the threat from terrorists:

- The bottom edges of the louver openings shall be at least 10 feet above grade elevation.
- The openings in the walls at the bottom of the louvers shall be sloped, or flush with the louver faces, so that a canister or container cannot sit on a ledge at the bottom of the louvers.
- Louvers shall be provided with heavy-gauge expanded metal screens and integral filters, as described below:
 - a. Expanded metal shall be 16-gauge minimum, diamond-shaped with 1-inch maximum openings.
 - b. Expanded metal shall be installed over outside of louvers.
 - c. Integral filter shall be a 30% filter of the pleated throwaway type, unless system performance mandates a different filter efficiency. This filter is not an additional filter normally included with air handling units.

1.12.14 Boiler Room Combustion Air

The boiler room shall be provided with combustion air louvers sized and located in accordance with NFPA 54, so that one combustion air louver is located within 12 inches of the ceiling, and another combustion air louver is located within 12 inches of the floor. The upper combustion air louver shall be located directly below the lower combustion air louver. A vertical duct, open at the top and bottom, shall run from the bottom of the lower combustion air louver, to the top of the upper combustion air louver. This shall prevent the outside air from blowing through the combustion air louvers, into the boiler room. The vertical combustion air duct shall be sized in accordance with NFPA 54.

1.12.15 Return Ductwork

Return ductwork shall extend into each ceiling plenum that is segregated by partition walls extending to structure. A return air branch with a volume control damper shall be located above the ceiling off each segregated space. Return air shall be pulled from the ceiling plenum, through lay in ceiling mounted return air grilles. The return air branch volume dampers shall be balanced to return only enough air to maintain a positive pressure within the building, to prevent outside air infiltration.

1.13 BUILDING TEMPERATURE CONTROL SYSTEMS

This Section contains instructions and engineering requirements for the design of the new Direct Digital Control (DDC) system for the facility, and modifications to the existing base energy management and control system (EMCS), required for the operation of the building mechanical systems. The DDC system shall be compatible and fully integrated and connected to the existing Honeywell EMCS system. The DDC system shall be supplied and installed, as a part of this contract. Honeywell shall re-program the EMCS head-end computer to accommodate the new facility DDC system. Contractor shall provide equipment and services, peer-peer communications, including software database programming, graphics generation, calibration and end-to-end testing of the EMCS system head-end computer, and shall provide a complete DDC control system including DDC panels and DTC's, in the facility. EMCS system fiber shall be extended in accordance with Section 01007

ELECTRICAL REQUIREMENTS. The DDC system shall be designed to provide continuous and automatic control of all HVAC equipment. Where equipment is provided with a packaged control system, such as in the case of a boilers or chillers, the building control systems shall interface with the equipment's packaged control systems. The DDC panels shall be located in the boiler room and fan rooms. As a minimum, each air handling unit shall have a dedicated DDC panel. Mechanical/Boiler rooms, electrical rooms and communications rooms shall have space temperature sensors reporting to the DDC system.

Notwithstanding Section 00700 Contract Clauses FAR 52.236-5, Material and Workmanship, for the DDC/EMCS shall be manufactured by Honeywell Systems Inc. in order that the systems installed are fully compatible and fully integrated and connected to the Base Honeywell EMCS system. No other product shall be acceptable. The competition Advocate authorizes sole source procurement.

1.13.1 General DDC Requirements

All mechanical systems and equipment, shall be controlled, as described below, by local DDC panels located in the boiler room and fan rooms. The DDC panels shall operate in a stand alone fashion. To facilitate maintenance and to allow manual starting and stopping of equipment by maintenance personnel, a hard-wired Hand-Off-Automatic (HOA) control switch shall be provided for each new major piece of equipment (air handling unit, pump, exhaust fan, etc.) in order to override the automatic DDC start and stop functions.

a. Fire alarm condition on any fire alarm circuit shall automatically initiate the deactivation of the air handling units throughout the building.

b. All computing devices, shall be as defined in FCC Rules and Regulations FCC Part 15, and shall be certified to comply with the requirements for Class A computing devices and labeled as set forth in FCC Rules and Regulations FCC Part 15.

c. Temperature Control Contractor Experience - The temperature control Contractor shall have a working knowledge of Honeywell systems and experience installing these systems. The Contractor shall provide for approval the names and qualification of supervisory personnel (ie. Project Manager and /or Superintendent) that shall be used on this project. The Contractor shall also provide a list of references to be contacted from recent projects on which the proposed personnel performed similar duties. Approval shall be based on previous experience with Honeywell systems, qualifications and demonstrated ability of proposed personnel to manage resources in an efficient and effective manner. Experience and supervisory personnel qualifications must be submitted and approved before submittal of any technical data.

d. Emergency Service - The Government shall initiate service calls when the installed DDC/EMCS is not functioning properly. Qualified personnel shall be available to provide service to the complete DDC/EMCS installed under this project. Qualified personnel shall be defined as a factory trained journeyman in the brand of control system provided, this level of training shall be considered a minimum. The Government shall be furnished with a telephone number where the service supervisor can be reached at all times. Service personnel shall be at the site within 8 hours after receiving a request for service. The control system shall be restored to proper operating condition within 3 calendar days after receiving a request for service.

e. Software - The Contractor shall provide all software updates and verify operation in the system. These updates shall be accomplished in a timely manner, fully coordinated with base operators, and shall be incorporated into the operations and maintenance manuals, and software documentation provided

as submittals. There shall be at least one scheduled update near the end of the first year's warranty period, at which time the Contractor shall install and validate the latest released version of the Contractor's software.

f. All utility meters shall be connected to the base EMCS system to allow the necessary monitoring.

g. Fuses shall not be used for surge protection.

h. System descriptions and analyses submittal shall include and shall indicate how new DDC system shall interface with the existing Base EMCS as manufactured by Honeywell.

i. Scheduled inspections shall be at the beginning of construction.

j. Programming of the DDC front-end shall include a floor plan of the building showing all sensor and VAV locations, as-built numbers, and labeling of mechanical rooms.

1.13.2 DDC Panels

a. DDC panels shall be provided by Honeywell and shall be Model XL-5000, including associated interface boards, expansion boards, photo switches, circuit breakers, convenience outlets, power supplies and pulse to analog (PTA) converters. Any DDC panel not on UPS power shall have full battery backup. The battery shall have sufficient power to last for six hours. Each DDC panel shall be defined as including all specified DDC panel characteristics, including I/O functions as specified. All RAM based programs shall be downline loadable from the CCU, building controller or portable tester.

b. DDC panels shall be microcomputer-based with a minimum word size of eight bits. Each DDC panel shall have a minimum of 10 percent of its I/O functions as spare capacity. The type of spares shall be in the same proportion as the implemented I/O functions on the DDC panel, but in no case shall there be less than two spare points of each implemented I/O type. The DDC panel I/O functions shall be furnished complete, with no changes or additions necessary to support implementation of spare functions. Output relays associated with digital signals shall be considered part of the I/O function, whether physically mounted in the enclosure or separately mounted. Implementation of spare points by others shall necessitate only providing the additional field sensor or control, field wiring including connection to the system, and point definition assignment by the operator. The DDC panel shall contain all necessary I/O functions to connect to field sensors and control panels.

c. DDC panels shall include:

(1) The following controls:

(a) Main power switch.

(b) On-off line switch - enables and disables communications with CCU/CCC and /or building controller.

(c) Self test switch - exercise DDC panel functions.

(d) Reset switch - initializes CPU operation.

(e) DDC panel outputs disable switch.

(2) The following indicators:

(a) Power on - includes one for each power supply voltage.

(b) On Line (remotely-controlled).

(c) GO-NO GO for self test of DDC panel and all communications functions.

(d) DDC panel outputs disabled.

d. Sufficient memory shall be provided to perform all specified and shown DDC panel functions and operations, including all spares, but not less than 64K bytes.

e. The DDC panel shall contain hardware to support a power fail automatic restart as specified.

1.13.3 Support Equipment

PROM Programmer - Where the DDC panel utilizes PROM for applications programs or data file parameters, provide a PROM programmer to program those PROM's used. The programmer shall be driven remotely through a dedicated EIA RS-232 interface or from the DDC panel portable tester. Provide means to remotely create, verify, modify, add to, and list the applications programs and data file parameters. Provide means to erase each type of EPROM supplied. Ten spares of each PROM or EPROM type used for applications programs and data file parameters shall be delivered.

1.13.4 Enclosures

Shall conform to the requirements of NEMA 250 for the types specified. Finish color shall be the manufacturer's standard, unless otherwise indicated. Damaged surfaces shall be repaired and refinished using original type finish. Enclosures installed indoors shall be NEMA 12 or as shown. Enclosures installed outdoors shall be NEMA 4 unless otherwise shown.

1.13.5 Power Supply

The DDC panels shall have power conditioning hardware.

1.13.6 DDC Panel Software

a. Monitoring and Control - Each command shall be executed by the DDC panel only after all constraints checks have been passed. Each command point shall have unique constraints assigned. High and low reasonableness values or one differential rate-of-change value shall be assigned to each analog input. Values outside the reasonableness limits shall be rejected.

b. DDC Panel Self-Test Diagnostics - Each DDC panel shall have self-test diagnostic routines implemented in firmware. The tests shall include routines that exercise memory.

d. DDC Panel Resident Applications Programs - The Contractor shall provide the following applications programs as specified in paragraph APPLICATIONS PROGRAMS and as required by the I/O summary tables, and the associated constraints and interlocks as specified and shown, resident in the panel.

e. Software Control Blocks - The Contractor shall provide a hard copy of the software control blocks on media compatible with the DDC panel portable tester as specified herein.

1.13.7 DDC Panel Command Software

a. Calculated Point - This value shall be created by calculating it from any combination of digital and analog points, or other data. The result of the calculation shall be an analog or digital point having all the properties of real points, including alarms, without the associated hardware. The calculated analog point shall have point identification in the same format as

any other analog point. The calculated point shall be used in any program where the real value is not obtainable directly. Calculated point values shall be current for use by the system within 10 seconds of the time any input value changes.

b. Analog Totalization - Any analog point shall be operator assignable to the totalization program. Analog values shall be totalized within a given time period. This time period shall be defined uniquely for each point for intervals of 1 minute over an 8-hour period, 1 hour over a 1-week period, 1 week over a 1-month period, and 1 month over a 1-year period. At the end of the period, store the totals for future reference. Totalization shall then restart from zero for the next time period. The program shall keep track of the peak and total value measured during the current period and for the previous period. The operator shall be able to initiate a summary of all totalization information on a point, unit, building, or entire system. The operator shall be able to set or reset each totalized value individually. The operator shall be able to define, modify, or delete the time period on-line.

1.13.8 DDC Panel Application Programs

a. Program Inputs - The Contractor shall select the appropriate program inputs listed for each application program to calculate the required program outputs. Where the specific program inputs are not available, such as no status indication called for on the I/O summary table, provide a default value to replace the missing input, thus allowing the application program to be tested. All analog inputs to applications programs shall have an operator adjustable deadband to preclude short cycling or hunting.

b. PID Tuning Program - Software shall be provided to generate a time based plot of the PID control action. The plotted variables shall be the process variable and the control output, which shall be displayed and updated in real time as the control parameters are changed. The major tuning parameters for the PID control loop shall be displayed on the plot.

c. Control Applications - Software shall be provided to allow the operator to generate control logic programs in free form which shall include the following basic capabilities:

- (1) If, else, then statement logic.
- (2) Do-loops.
- (3) Algebraic calculations.
- (4) Boolean logic statements.
- (5) Relational expressions.

1.13.9 Controllers

All modulating mechanical processes (e.g., temperature, pressure, flow control) shall be controlled directly by the local DDC control panel. Except for safety and protection functions, software logic shall be used in lieu of relay logic. The contacts of safety and protection function instruments shall be hardwired in series with the common side of each equipment's HOA switch, and their proper operation shall not depend in any way upon the DDC.

a. Digital Controllers

Digital controller blocks or points within the control panels shall utilize a full proportional algorithm.

b. Stand-Alone Operation

The local control panels shall be fully capable of stand-alone operation on a continuous basis. All programs, including those based upon real-time clock or calendar events, shall reside in the local DDC panel.

c. Input/Output Devices

The control system shall utilize off-the-shelf input and output instruments (e.g., RTD sensors, actuators, relays) which are commercially available from third party vendors and who are independent from the DDC panel manufacturers.

1.13.10 Analog Sensors, Digital inputs & Digital outputs

All control devices shall be capable of removal from the system without disruption of service to the system in which they are installed.

a. Liquid flow measurement for use by the DDC system shall be performed by paddlewheel-type flow sensors only. Pitot-type sensing elements may be installed for local instrumentation used for testing and balancing purposes only.

b. The use of 4-20 ma analog sensors shall be prohibited.

1.13.11 Cable and Wiring - Interior

Cable and wire for the DDC system shall be separate from the distribution system serving any other system. All cable and wiring shall be installed in conduit. The data transmission media (DTM) shall be provided by the Contractor. The DTM shall be fiber optics cable complying to Class A computing devices as set forth in FCC Part 15. The Contractor shall provide data transmission media (DTM). DTM shall be as specified and extended as shown on the electrical drawings in accordance with section 01007 ELECTRICAL REQUIREMENTS.

a. Wire colors shall be as follows:

Analog Inputs: brown/yellow
Digital Inputs: orange/yellow
Digital Input Alarms: purple/yellow
Analog Outputs: blue/yellow
Digital Output: red/yellow

1.13.12 Cable and Wiring - Exterior

The base shall provide exterior cable and wire for the DDC system connection to the base system.

1.13.13 Control Valves

Sizing of control valves shall take into account upstream and downstream fittings and shall be in accordance with Instrument Society of America standard ISA S75.01-1985.

1.13.14 Variable Air Volume Boxes

VAV boxes shall be fitted with DDC unit controllers and velocity sensors compatible with the existing EMCS. VAV box temperature sensors shall be wall-mounted in a location not affected by the sun and shall be provided with 30 feet of sensor wire for future relocations. Where VAV air handling units with VAV boxes are provided, flow monitoring stations shall be provided to ensure proper indoor air quality when operating at minimum supply air flows.

1.13.15 Damper Actuators

All dampers shall be provided with 1-10 V-operated damper actuators.

1.13.16 Valve Actuators

All valves shall be provided with 1-10 V-operated valve actuators.

1.13.17 System Checklists and Startup Instructions

The designer shall develop Precommissioning Test Checklists, Functional Performance Test Checklists, and Startup Instructions for each system and item of equipment controlled by the temperature control system and shall include them in the temperature controls Specification. Each system and item of equipment shall have its own separate Checklist and Startup Instructions. The Checklists and Startup Instructions shall be tailored to each individual component of the respective system or item of equipment and shall use the terminology and nomenclature used in the drawings and specification.

1.13.18 Variable Frequency Drives

All variable frequency drives (VFD) shall be provided with an electrical bypass so that the motor can be operated if VFD fails.

1.13.19 VAV Air Handling Units

a. Unit Configuration:

- (1) Draw through plenum supply fan with variable frequency drive (VFD).
- (2) Access section providing manufacturer's required length upstream of plenum supply fan.
- (3) Chilled water coil with 2-way or 3-way valve.
- (4) Access section between heating and chilled water coil.
- (5) Heating water coil with 2-way or 3-way valve.
- (6) Combination filter/mixing box with 30% filter.
- (7) Economizer section.
- (8) Return fan with variable frequency drive.

b. AHU DDC I/O Summary

- (1) AI: Differential pressure sensor for supply fan VFD control.
- (2) DI: High limit pressure switch.
- (3) AI: Supply air temperature sensor.
- (4) AI: Supply fan air flow measuring station (velocity sensing matrix).
- (5) DI: Differential pressure switch across supply fan.
- (6) AI: Supply fan speed from VFD.
- (7) AO: Supply fan speed control to VFD.
- (8) DO: Supply fan start/stop relay to VFD.
- (9) AO: Chilled water control valve (2-way or 3-way valve).
- (10) AO: Heating water control valve (2-way or 3-way valve).
- (11) DI: Differential pressure switch across pump.
- (12) DI: Freezestat (hard wired to shut down AHU supply and return fan; auxiliary alarm signal to DDC).
- (13) AI: Mixed air temperature sensor.
- (14) AO: Mixed air damper control.
- (15) DI: Differential pressure switch across filter.
- (16) AI: Return fan air flow measuring station (velocity sensing matrix).
- (17) DI: Differential pressure switch across return fan.
- (18) AI: Return fan speed from VFD.

- (19) AO Return fan speed control to VFD.
- (20) DO Return fan start/stop relay to VFD.
- (21) AI: Outside air flow measuring station (velocity sensing matrix).
- (22) AO: Relief damper control.
- (23) AI: Outside air temperature sensor.

c. AHU Sequence of Operation.

(1) Supply Fan

Supply fan shall have hand-off-auto (H-O-A) switch mounted on VFD starter. Supply fan shall run when in "Hand" position; be stopped when in "Off" position; be controlled through DDC when in "Auto" position. When in "Auto" mode VFD shall modulate (b.(7),b.(8)) to maintain a 250 Pa static pressure in supply duct in response to the differential sensor (b.(1)) in supply duct. Supply airflow measuring station (b.(5)) shall send signal to DDC so that return fan can track supply fan to return correct airflow rate. Supply fan shall start/stop (b.(9)) through DDC when in the "Auto" mode. DDC alarm shall occur if differential pressure switch (b.(6)) across supply fan fails to prove flow after a programmed amount of time from DDC start signal.

(2) Return Fan

Return fan shall have hand-off-auto (H-O-A) switch mounted on VFD starter. Return fan shall run when in "Hand" position; be stopped when in "Off" position; be controlled through DDC when in "Auto" position. When in "Auto" mode VFD shall modulate (b.(20),b.(21)) through DDC via return fan air flow measuring station (b.(18)) in order to maintain constant building pressure. DDC signal shall ensure: air flow rate from return fan = supply fan air flow rate-total general exhaust air flow rate-air flow rate equal to 1/2 air change per hour. Return fan shall start/stop (b.(22)) through DDC when in the "Auto" mode. DDC alarm shall occur if differential pressure switch (b.(19)) across return fan fails to prove flow after a programmed amount of time from DDC start signal.

(3) Chilled/Heating Water Control.

Chilled water control valve (b.(10)) shall be closed when outdoor air temperature is 55°F and below (b.(25)), and shall modulate to maintain a reset supply air temperature, in response to supply air temperature sensor (b.(4)), as required to satisfy the most demanding temperature control zone, when the outdoor air temperature is 55°F and above. Heating water control valve (b.(11)) shall be closed when outdoor air temperature is 55°F and above (b.(25)), and shall modulate to maintain 55°F supply air temperature in response to supply air temperature sensor (b.(4)), when outdoor air temperature is below 55°F (b.(25)).

(4) Damper Control Occupied Hours.

When the outdoor air temperature is above 55°F (b.(25)) the following shall occur: Mixed air dampers shall be modulated (b.(16)) to intake the minimum outside air flow rate via the outside air flow measuring station (b.(23)). When the outdoor air temperature is 55°F and below (b.(25)) the following shall occur: Mixed air dampers shall be modulated (b.(16)) through DDC via mixed air temperature sensor (b.(15)) to maintain 55°F mixed air temperature set point. When outside air flow rate drops below minimum required for ventilation, mixed air and relief air dampers shall be sequenced as

described above. Relief air damper shall be modulated (b.(24)) to exhaust proper airflow rate through DDC to maintain constant building pressure: exhaust air flow rate = outside air flow rate-total general exhaust air flow rate-air flow rate equal to 1/2 air change per hour. A ventilation delay mode of operation shall be provided, so that the outside air damper is closed and return air damper is open (a.(16)), and the relief air damper is closed (b.(24)) during morning warm up and cool down. The mixed air and relief air dampers ((b.(16), (b.(24))) shall modulate in adjustment to VAV terminal units that are allowed to shut from a light switch off position during occupied operating hours, as described below.

(5) Damper Control Unoccupied Hours.

Outside air damper and shall be normally closed and return air damper shall be normally open (b.(16)). Relief air damper shall be normally closed (b.(24)). Dampers shall return to normal positions during unoccupied hours.

(6) Filter

DDC alarm shall occur if air filter differential pressure switch (b.(17)) reaches high limit.

(7) Safeties

The following shall stop the supply and return fan and return mixing and relief dampers to normal positions and require a manual reset to restart system:

- (a) High limit pressure switch (b.(2)).
- (b) Duct smoke detector (b.(3)).
- (c) Freezestat (b.(14)).

1.13.20 Shut Off VAV Terminal Units

Each shut off VAV terminal unit shall have a re-heat coil with a 2-way or 3-way control valve. Each shut off VAV terminal unit shall have a primary air valve. Each shut off VAV terminal unit shall have a DDC unit controller.

a. Shut Off VAV Terminal Unit Controller DDC I/O Summary:

- (1) AI:Flow measuring station (velocity sensing matrix).
- (2) AI:Space temperature sensor.
- (3) AO:Volume damper control.
- (4) AO:Heating water control valve.
- (5) DI:Occupied/Unoccupied from light switch(s) or motion sensor(s) (Classrooms and Conference Rooms Only).
- (6) DO:Occupied/Unoccupied to VAV AHU DDC panel. (Classrooms and Conference Rooms Only)
- (7) AI:Discharge Air Temperature Sensor.

b. VAV Terminal Sequence.

- (1) During occupied hours the space temperature sensor (a.(2)) shall send a signal to the VAV unit controller to maintain a 75°F space cooling setpoint. The volume control damper shall modulate (a.(3)) from the fully open position to the minimum position through pressure independent control via the flow measuring station (a.(1)) as the space cooling load decreases. When the volume control damper (a.(3)) reaches the minimum position and the

space temperature drops below the 70°F space heating setpoint, the heating water control valve (a.(4)) shall modulate to maintain the space heating setpoint.

(2) When the light switch(s) to the zone is turned off or the motion sensor(s) indicate no occupancy during occupied hours, a signal to the VAV unit controller (a.(5)) shall allow (for classrooms and conference rooms only):

- The primary air valve to shut (a.(3)), and a signal shall be sent to the VAV AHU (a.(6)) so that the AHU mixed air and exhaust dampers can adjust to bring in less outside air.
- A 85°F setup, or a 60°F setback temperature in response to the space temperature sensor (a.(2)).

1.13.21 Exhaust Fans.

a. Each exhaust fan shall have a motorized 2-position discharge damper.

1.13.22 Chilled Water System.

a. System Configuration.

A single air cooled, rotary screw chiller shall generate chilled water to satisfy the building cooling requirement. There shall be a chiller circulation pump (CWP-1), and one chilled water distribution pump (CWP-2). The chiller circulation pump shall have a constant volume drive motor. The chilled water distribution pump shall have a variable frequency drive motor.

b. Chiller DDC I/O Summary:

- (1) DO:enable/disable relay in single point power source connection.
- (2) DI:Dry contact connection from factory mounted packaged control panel for trouble alarm to DDC.
- (3) AO:Chilled water Reset from DDC to chiller factory mounted control panel.
- (4) AI:Entering chilled Water Temperature.
- (5) AI:Leaving Chilled Water Temperature

c. Chilled Water Pump DDC I/O Summary:

- (1) DO:CWP-1 Pump start/stop relay.
- (2) DI:CWP-1 Flow switch.
- (3) DO:CWP-2 Pump start/stop relay.
- (4) DI:CWP-2 Flow switch.
- (5) AO:CWP-2 VFD
- (6) AI:CWP-2 VFD
- (7) DI:Differential pressure sensor.

d. Chiller Abbreviated Sequence.

The packaged factory mounted electronic control system for the chiller shall be capable of maintaining the reset chiller water supply temperature, as required from DDC system (b.(3)). Chiller shall not be enabled unless proof of flow has been established through CWP-1 flow switch (c.(2)). Chiller shall be enabled (b.(1)) by DDC system during occupied hours when the outdoor air temperature is above 55°F. Alarm shall be provided to DDC

from chiller factory mounted control panel (b.(2)), if trouble occurs with chiller control.

e. Chilled Water Pump CWP-1:

Chilled water pump shall have hand-off-auto (H-O-A) switch mounted on starter. Pump shall run when in "Hand" position; be stopped when in "Off" position; be controlled through DDC when in "Auto" position. Pump shall start/stop (c.(1)) through DDC when in the "Auto" mode. Chilled water pump shall start when outdoor air temperature is above 55°F, and shall stop when the outdoor air temperature 55°F and below. DDC alarm shall occur if flow switch (c.(2)) fails to prove flow after a programmed amount of time from DDC start signal.

f. Chilled Water Pump CWP-2:

Chilled water pump shall have hand-off-auto (H-O-A) switch mounted on VFD starter. Pump shall run when in "Hand" position; be stopped when in "Off" position; be controlled through DDC when in "Auto" position. Pump shall start/stop (c.(3)) through DDC when in the "Auto" mode. Chilled water pump shall start when outdoor air temperature is above 55°F, and shall stop when the outdoor air temperature 55°F and below. DDC alarm shall occur if flow switch (c.(4)) fails to prove flow after a programmed amount of time from DDC start signal. VFD shall operate (c.(5)), (c.(6)) in response to the distribution chilled water system differential pressure sensor (c.(7)), to maintain a constant system pressure.

1.13.23 Heating Water System.

a. System Configuration.

Two gas fired, three pass, firetube boilers arranged in parallel shall generate heating water to satisfy the building heating requirement. The boilers shall be equipped with modulating burners, and shall be sequenced from a packaged boiler master plant controller. There shall be a heating water circulation pump per boiler (HWP-1,HWP-2), and two distribution pumps (HWP-3,HWP-4) arranged in parallel. The boiler circulation pumps shall have constant volume drive motors. The heating water distribution pumps have variable frequency drive motors.

b. Boiler System I/O Summary:

- (1) DO:Enable/disable relay in single point power source connection to packaged boiler sequencer/controller from DDC.
- (2) DI:Dry contact connection from packaged boiler sequencer/controller for trouble alarm to DDC.

c. Heating Water Pumps DDC I/O Summary:

- (1) DO:HWP-1 Pump start/stop relay.
- (2) DI:HWP-1 flow switch.
- (3) DO:HWP-2 Pump start/stop relay.
- (4) DI:HWP-2 flow switch.
- (5) DO:HWP-3 Pump start/stop relay.
- (6) DI:HWP-3 flow switch.
- (7) AO:HWP-3 VFD.
- (8) AI:HWP-3 VFD.

- (9) DO:HWP-4 Pump start/stop relay.
- (10) DI:HWP-4 flow switch.
- (11) AO:HWP-4 VFD.
- (12) AI:HWP-4 VFD.
- (13) AI:Production heating water loop supply temperature.
- (14) AI:Production heating water loop return temperature.
- (15) AI:Distribution heating water loop supply temperature.
- (16) AI:Distribution heating water loop return temperature.
- (17) DI:Distribution heating water loop differential pressure switch.

d. Packaged Boiler Sequencer/controller Abbreviated Sequence.

The packaged microprocessor sequencer/controller for boiler shall provide the following:

(1) Boiler system shall be enabled from DDC system from signal (b.(1)) to packaged microprocessor sequencer/controller when outdoor air temperature is 65°F or below, and shall be disabled when the outdoor air temperature is above 65°F. The lead boiler shall be energized in response to a system demand. System demand shall be in response to maintaining 190°F, as measured by distribution supply water temperature sensor (c.(15)). After an adjustable time delay, to allow the boiler firing sequence to elapse, the controller shall begin modulating the lead burner upward from the ignition starting point at a rate proportional to the system temperature rate of change and the gain setting. At a field selected percent modulation, if more capacity is required, the lag boiler shall be energized. The lag boiler shall begin modulating at the ignition start point, after a time delay, and proceed according to system rate of change and gain setting. As the system temperature rises, control shall decrease the modulation of the lag boiler so as not to over shoot the set point. Once the lag boiler has been modulated down to it's ignition start point, it shall be held there while the lead boiler's modulation is reduced. The lag boiler shall not be de-energized until the lead boiler's modulation has dropped below it's modulation start point. Boilers shall be unable to fire unless flow is proved through respect boiler circulation pump (c.(2)), (c.(4)). An alarm shall be sent to the DDC system from the master plant control panel (b.(2)) if the boilers are unable to fire because of: a no flow condition, high temperature alarm, low water alarm, electronic ignition failure. Lead-lag boilers shall rotate on a monthly basis.

e. Heating Water Pumps HWP-1 and HWP-2 Abbreviated Sequence:

Heating water pumps shall have hand-off-auto (H-O-A) switch mounted on starters. Pumps shall run when in "Hand" position; be stopped when in "Off" position; be controlled to start/stop through the packaged microprocessor sequencer/controller when in the "Auto" mode. Heating water pumps shall start/stop (c.(1)), (c.(3)) with respective boilers served.

f. Heating Water Pumps HWP-3 and HWP-4 Abbreviated Sequence:

Heating water pumps shall have hand-off-auto (H-O-A) switch mounted on VFD starter. Pumps shall run when in "Hand" position; be stopped when in "Off" position; be controlled through DDC when in "Auto" position. Pumps shall start/stop (c.(5)), (c.(9)) through DDC when in the "Auto" mode, in a lead-lag configuration. The lead-lag pump shall rotate on a monthly basis. If the lead pump fails to prove flow upon start (c.(6)), (c.(10)) after a

programmed amount of time, an alarm shall be sent to the DDC and the lag pump shall start. The lead heating water pump shall start when outdoor air temperature is 65°F or below, and shall stop when the outdoor air temperature is above 65°F. Only the lead pump shall operate when system demand requires only one pump up to 90% of the VFD drive capacity, at which time the lag pump shall start and operate in parallel with the lead pump. VFD's shall operate (c.(7)), (c.(8)), (c.(11)), (c.(12)) in response to the distribution heating water system differential pressure sensor (c.(17)), to maintain a constant system pressure.

g. Unit Heaters.

Unit heaters shall be controlled by a wall-mounted electric thermostat to cycle on and off in order to maintain a 50°F space temperature

h. Baseboard Heaters

Indicate on drawings the mounting height from bottom of radiator cover to floor. Height shall be coordinated with installation of electrical outlets to prevent any interferences. Where necessary to clear electrical receptacles, fin-tube radiators will be installed with the bottom of the radiator cover 16 inches above the floor, space permitting. Space allocation shall be carefully coordinated with Architectural design where radiation is installed in toilet rooms. In quarters and administrative buildings, hot water fin-tube radiators shall be provided with individual room temperature control and shall be equipped with solid front, slotted, sloping top covers.

1.13.24 Communication Room Split DX Cooling Systems

a. Each split DX cooling system shall be controlled through the manufacture's packaged control system.

b. Split DX Cooling System DDC I/O Summary

- (1) AI:Communications Room 139 temperature sensor.
- (2) AI:Communications Room 143A temperature sensor.
- (3) AI:Communications Room 208 temperature sensor.
- (4) AI:Communications Room 227 temperature sensor.

1.13.25 Gas and Water Meter DDC I/O Summary

- (1)DI: Signal from gas meter pulse initiator to DDC.
- (2)AI: Flow meter output from water meter to DDC.

1.14 TESTING, ADJUSTING, AND BALANCING OF HVAC SYSTEMS

This Section contains instructions and engineering requirements relating to the testing, adjusting, and balancing requirements of new mechanical HVAC systems. The work required by this section shall be complete, including all test and inspection reports, before starting the ddc/EMCS Field Test.

1.14.1 Balancing Firms Qualifications

Testing, adjusting, and balancing (TAB) shall be performed by an independent firm using certified technicians under the direct supervision of a certified technician. Technicians shall be certified by the National Environmental

Balancing Bureau (NEBB) or the Associated Air Balance Council (AABC). The firm shall select AABC MN-1, or NEBB-01 as the standard for providing testing, adjusting and balancing of the mechanical systems. Air handling units' filters shall be artificially loaded during testing and balancing operations. Air handling unit(s) air flow shall be set for maximum with filters fully loaded.

a. TAB can be performed only after each system is complete, including installation and operation of controls, and all aspects of the facility that have any bearing on the HVAC systems, including installation of ceilings, walls, windows, doors, and partitions, are complete. All items such as ductwork and piping parts, terminal connections, etc, necessary to perform TAB shall be complete during the Systems Readiness Check.

1.15 ENERGY USE BUDGET (EUB) COMPLIANCE CHECK

Design Energy Usage (DEU) estimates shall be calculated for the new building to verify compliance with EUB in accordance with 10 CFR, Subpart A, Part 435, ASHRAE/IESNA 90.1; and the Federal Energy Policy Act of 1992. Energy Usage Budget shall be done without process loads.

1.16 ENERGY CONSERVATION

Mechanical designs shall be economical, maintainable and energy conservative and solar water preheating systems with full consideration given to the functional requirements and planned life of the facility. Emphasis shall be given to heat reclamation, outside air usage and other energy conservation measures for mechanical systems. Each major item of proposed mechanical equipment shall have a net efficiency rating that is equal to or exceeds the net efficiency ratings of similar or equal equipment of the four manufacturers, each having one of the four highest ratings.

1.17 AIR POLLUTION CONTROL

Air pollution control shall be incorporated in all designs using the latest Local, State, and Federal regulations and standards. Analyze and report on requirements in the design analysis, and include in the design as applicable. The most stringent of all regulations and standards shall be implemented into the design. If in doubt as to requirements, contact this office for assistance.

1.18 TRAINING

Training courses shall be conducted for 15 operating staff members designated by the Contracting Officer in the maintenance and operation of all systems (one week for DDC/EMCS controls). A training day is defined as 8 hours of classroom instruction, including breaks and lunchtime, Monday through Friday, during the daytime shift in effect at the training facility. For guidance in planning the required instruction, the Contractor shall assume that the attendees shall have a high school education or equivalent, and are familiar with the systems. No training shall be scheduled until training manuals and O&M manuals have been approved by the Government. A minimum of 15 O&M manuals shall be provided for the instructions and 1 manual for each facility shall be given to the Contracting Officer to turnover to the Base Civil Engineer.

Training courses shall be videotaped by the Contractor. Base CE shall be provided with a minimum of three (3) copies of complete training video tape.

1.18.1 Training Course Content

The courses shall be taught at the project site for a period of 5 training days. The training courses shall cover all the material contained in the Operating and Maintenance Instructions, and O&M manuals the layout and location of each system and shall include the following for each system.

Typical systems and similar systems may be treated as a group, with instruction on the physical layout of one such system. The results of the performance verification tests and the calibration, adjustment and commissioning reports shall be presented as benchmarks of the system(s) performance by which to measure operation and maintenance effectiveness.

- a. Troubleshooting
- b. Diagnostics
- c. Calibration
- d. Adjustment
- e. Commissioning
- f. Repair procedures

1.19 TESTING

Contractor shall provide all testing required by all specifications provided by the Contractor.

1.20 COMMISSIONING OF HVAC SYSTEMS

This section contains instructions and engineering information relating to the commissioning of HVAC systems, including the precommissioning checks and functional performance tests. Commissioning shall begin only after all work required in paragraphs entitled "Testing, Adjusting, and Balancing of HVAC Systems" and the "Temperature Controls System" have been successfully completed, and all test and inspection reports and operation and maintenance manuals required in other Section's specifications have been submitted and approved.

- a. Pre-commissioning Checks shall be performed for each item of mechanical equipment. Deficiencies discovered during these checks shall be corrected and retested prior to start of the Functional Performance Tests.
- b. Functional Performance Tests shall be performed for each equipment item. Functional performance tests shall begin only after all pre-commissioning checks have been successfully completed.
- c. Commissioning of HVAC systems shall begin only after all work required in related sections, including Sections HVAC Control Systems and TAB of HVAC Systems has been successfully completed. All test and inspection reports and O&M manuals shall be submitted and approved before commissioning is conducted.

PART 2 NOT USED

PART 3 NOT USED

-- End of Section --

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SECTION 01007

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PART 2 NOT USED

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SECTION 01007

ELECTRICAL REQUIREMENTS

PART 1 ELECTRICAL DESCRIPTIONS AND NARRATIVES

1.1 GENERAL

The 37th B1-B Squadron Operations Facility will provide adequate support for offices, administrative support, training, storage and parking needs.

1.1.1 Required Design Criteria

Publications, codes, specifications and standards shall be used as the basis for the project design and shall include, but not be limited to the following. Publications and codes that imply recommendations shall be taken to be mandatory. The latest edition for each publication shall be used.

Some of these publications may be available to download in Acrobat PDF or MS Word file format at the following internet addresses:

<http://www.afcesa.af.mil/publications/ETLs/default/html>

<http://www.access.gpo.gov>

<http://www.access-board.gov>

<http://store.mil-standards.com>

<http://www.hnd.usace.army.mil/techinfo/index.asp>

<http://www.afcesa.af.mil/default.htm>

<http://www.e-publishing.af.mil>

<http://www.ccb.org/ufgs/ufgstoc.htm>

<http://www.dtic.mil>

AFJMAN 32-1080	Electric Power Supply & Distribution
AFJMAN 32-1083	Electric Interior Facilities
AFM 88-45	Cathodic Protection Design
AFH 32-1163	Engineering Weather Data
UFC 3-520-01	Unified Facilities Criteria, Design: Interior Electrical Systems
UFC 4-021-01	Unified Facilities Criteria, Design and O&M: Mass Notification Systems
AFI 32 - 1024	Standard Facility Requirements
AFI 32 - 1054	Corrosion Control

37TH B1-B SQUADRON OPERATIONS FACILITY, ELLSWORTH AFB, SD

AFI 32 - 1064	Electrical Safe Practices
AFI 32 - 1065	Grounding Systems
DOD 5200.1-R. Appendix 7 January 1997	Security Manual
ETL 02-12	Communications and Information System Criteria for Air Force Facilities
ETL 90-6	Electrical System Grounding, Static Grounding and Lightning Protection (Attachment 14)
ETL 94-2	Utility meters in New and Renovated Facilities (Attachment 10)
ETL 99-4	Fire Protection Engineering Criteria and Technical Guidance - Emergency Lighting and Marking of Exits.
IEEE C2	National Electrical Safety Code
IEEE 142	Recommended Practice for Grounding of Industrial and Commercial Power systems. (Green Book)
IEEE 242	Recommended Practice for Protection and Coordination of Industrial and Commercial Power Systems. (Buff book)
IEEE 1110	Powering and Grounding Sensitive Electronic Equipment (Emerald Book)
MIL HDBK 1008C	Fire Protection for Facilities - Engineering, Design, and Construction
MIL HDBK 1190	Facilities Design and Construction
MIL HDBK 419	Grounding, Bonding and Shielding for Electronic Equipment
MIL STD 188/124 (1998)	Grounding, Bonding and Shielding for Common Long Haul/Tactical Communications Systems
UL 1449 (Feb 1998)	Standard for Safety for TVSS (Transient Voltage Surge Suppressors)
UL 489 (2002)	Molded-Case Circuit Breakers, Molded-Case Switches and Circuit-Breaker Enclosures (Same as NEMA AB-1)
AEIC CS-6 (1992)	Specifications for Ethylene Propylene Rubber Insulated Shielded Power Cables Rated 5 through 69kV
NFPA 70	National Electrical Code (NEC)

37TH B1-B SQUADRON OPERATIONS FACILITY, ELLSWORTH AFB, SD

NFPA 72	National Fire Alarm Code
NFPA 75	Standard of the Protection of Electronic Computer/Data Processing Equipment
NFPA 90A	Installation of Air conditioning and Ventilating Systems
NFPA 101	Life Safety Code
NFPA 780	Standard for the Installation of Lightning Protection Systems
NACE RP0190	External protective Coatings for Joints, Fittings, and Valves on Metallic Underground or Submerged Pipelines and Piping Systems
IES HANDBOOK	Illuminating engineering Society Handbook
LIGHTING STANDARDS	Corps of Engineers Standard Lighting Fixture Details http://cadlib.wes.army.mil CADD Details Library, Electrical Details USACE Standard Details 40-06-04, Oct 97
DISTRIBUTION STANDARDS	Corps of Engineers Standard Electrical Distribution Details. http://cadlib.wes.army.mil CADD Details Library, Electrical Details Electrical Service and Distribution
DESIGN GUIDE	See Chapter 12, Omaha District Design Guide (See Folder "References" on CD-ROM)
DESIGN GUIDE	Ellsworth AFB Engineering Criteria, Chapter 4 (See Attachment 23)
DESIGN GUIDE	Communication Requirements for 37 th BS Complex (See Attachment 21)
TELECOMMUNICATIONS INDUSTRY ASSOCIATION/ELECTRONIC INDUSTRIES ASSOCIATION (TIA/EIA).	
568-B	Building Telecommunications Wiring Standards
569-A	Commercial Building Standard for Telecommunications pathways and Spaces
606	The Administration Standard for The Telecommunications Infrastructure of Commercial Buildings
607	Commercial Building Grounding and Bonding Requirements for Telecommunications

WEBSITES AND SELECT REFERENCES

For AFJMAN 32- AND AFI 32- items above, go to <http://www.e-publishing.af.mil/> ; click on "Electronic Publications" ; click on "United States Air Force" and click on Series "32".

Also see the following websites for additional documents:

<http://www.hnd.usace.army.mil/techinfo/index.asp>

<http://www.afcesa.af.mil/publications/ETLs/default.html>

For any UFGS references, see the following website:

<http://www.ccb.org/ufgs/ufgstoc/htm>

1.2 REQUIREMENTS

1.2.1 General

Drawings, specifications, design analysis and calculations shall be provided for both the 60 percent design and Final design submittals, and shall be in accordance with SECTION 01336 - 60 PERCENT DESIGN REQUIREMENTS, & SECTION 01338 - 100 PERCENT DESIGN REQUIREMENTS.

1.2.2 Section Requirements

Electrical systems, including, but not limited to exterior power distribution, interior power, exterior and interior lighting, exterior and interior telecommunication infrastructure, public address system, lightning protection system, interior CATV system, fire alarm and detection, security system rough-in and cathodic protection shall be designed to comply with this section and the documents listed to the extent referenced in this section. The publications are referred to in the text by basic designation only.

1.2.3 Technical Specifications

Provide new electrical systems, complete and ready for operation. The design and installation of all electrical systems, including manufacturer's products, shall meet the instructions and requirements contained herein (including the associated RFP drawings) and the requirements of the UFGS technical guide specifications. Where conflicts between these instructions and the guide specifications or criteria exist, these instructions shall take precedence. Any installation requirements within these instructions, but not contained in the specifications, shall be added to the specifications or shown on the drawings.

1.2.4 System Maintainability

Electrical designs shall give maximum consideration to the comfort of the occupants. The design shall also be economical, maintainable, energy conservative and shall take into account the functional requirements and planned life of the facility. Electrical designs shall also consider life cycle operability, maintenance and repair of the facility and real property installed equipment components and systems. Ease of access to components and systems in accordance with industry standards and safe working practices

is a design requirement. All like equipment and accessories shall be from a single manufacturer.

1.2.5 Standard Products

Material and equipment shall be a standard product of a manufacturer regularly engaged in the manufacture of the product and shall essentially duplicate items that have been in satisfactory use for at least 2 years prior to bid opening. The label or listing of the Underwriters Laboratories, Inc., will be accepted as evidence that the materials or equipment conform to the applicable standards of that agency. In lieu of this label or listing, a statement from a nationally recognized, adequately equipped testing agency indicating that the items have been tested in accordance with required procedures and that the materials and equipment comply with all contract requirements will be accepted.

1.2.6 Seismic Protection

Seismic Protection for electrical equipment shall be designed and installed in accordance with the requirements of Seismic Protection for Miscellaneous Equipment Specification UFGS SECTION 13080A and Seismic Protection for Electrical Equipment Specification UFGS SECTION 16070A.

1.2.7 Environmental Criteria

Electrical equipment such as facility transformers, generators, motors, and other electronic assemblies shall be designed for altitude 3230 feet.

1.2.8 Building Work Demarcation

A demarcation line extending 5 feet from the perimeter walls of a building has been established to distinguish between the work performed under building specifications and site work documents. (Example: Underground conduit under a floor slab and extending to the 5 foot line would be covered by UFGS 16415A and beyond that point by UFGS 16375A.)

1.2.9 Accommodation of Disabilities

All designs shall incorporate provisions of the Americans With Disabilities Act Guidelines (ADAAG), NFPA 72 and the Uniform Federal Accessibility Standards (UFAS). All aspects concerning placement and sizing from these standards shall be incorporated. In case of a conflict between the ADAAG and UFAS or the ADAAG and NFPA 72, the ADAAG shall govern. Provisions pertaining to clearances shall generally be accommodated by other disciplines. However, the design shall observe some precautions such as avoiding equipment configurations that would project into restricted clear space in corridors.

1.2.10 Color of Exterior Equipment

All exterior electrical equipment such as the service entrance transformer, pad-mounted switches etc. shall be factory painted the base standard color. Coordinate with the base Architect for standard color chip number.

1.2.11 Calculations

The following calculations shall be performed during the design and provided as part of the completed design package for approval. Calculations shall be submitted in bound (or 3-ring binder) format with index and page numbers.

- a. Exterior Power Distribution and Communication Duct Pulling Calculations: Provide pulling calculations for primary power cable and communication cable to ensure allowable cable pulling tensions are not exceeded. Ensure that contractor designed manhole/ductbank system is suitable for cable installation.
- b. Electrical Distribution Sizing Calculations: Provide sizing calculations for each component of the electrical distribution system (exterior and interior) based upon NEC (identify NEC article reference). Calculations shall include, but shall not be limited to Main Switch Board sizing, distribution panel sizing, branch circuit panel board sizing, feeder sizing, transformer sizing (include K-rated loads where applicable), etc. Provide feeder and circuit breaker sizing for all combination load mechanical equipment and for mechanical equipment loads greater than 20kVA.
- c. Voltage Drop Calculations: Provide voltage drop calculations for each node of the distribution system based to the branch circuit panel board level. Provide branch circuit voltage drop calculations for circuits in excess of 165 feet in length. Ensure that the total voltage drop (service transformer to branch circuit) does not exceed 5% of the nominal voltage at the point of load per the NEC, including the service entrance conductors.
- d. Short Circuit Analysis Calculations: Provide short circuit analysis based upon infinite bus at the service transformer primary. Provide three-phase bolted fault short circuit values at each node of the electrical distribution system unless the short circuit ampacity is less than 10,000 amps. Provide summary table on the design oneline diagram with node identified on the design oneline drawing.
- e. Protective Coordination Analysis: The electrical distribution system shall be designed to provide a fully coordinated power system. Provide protective coordination analysis for all distribution equipment overcurrent protection devices. Protective coordination shall also include cable damage curve references, and transformer damage curve references. Provide graphical time-current curve charts with overlaid coordination curves. Provide written summary of analysis. The study shall include the interior electrical distribution system and primary distribution system back to the existing primary line.
- f. Exterior Illumination Calculations: Provide point-point exterior illumination calculations for all parking and walkway areas identified on the site utility plan included in this RFP. Provide summary of minimum, maximum, and average-to-minimum ratios.
- g. Interior Illumination Calculations: Provide illumination calculations for each interior room. Calculations may either use the room-cavity-ratio method or point-to-point method. Provide calculation summary identifying room luminance.

1.3 COORDINATION OF ELECTRICAL CRITERIA

All electrical criteria provided in this section shall be coordinated with the architectural section, mechanical section, fire protection section, structural section, interior design section, civil and site section, and all other

sections not mentioned here. The number and location of all electrical equipment indicated in the electrical requirements are approximate. Contractor design shall meet the intent of the electrical requirements provided in this section. Contractor shall coordinate the final locations of all electrical equipment with the base users to be provided by the Contracting Officer in the Field after the award of the RFP.

1.4 EXISTING PRIMARY ELECTRICAL DISTRIBUTION SYSTEM

Contractor shall relocate a primary overhead line to a new underground duct bank, relocate a padmounted 15 KV switch, reconnect the existing underground primary feeder for the 34th Squad Ops to a new equipment enclosure and lower an underground 15 KV duct bank as indicated on the Site Utility Plan. All existing electrical switches and equipment associated with this project which serve existing facilities shall remain in service during the course of this project. Coordinate all outages for cut-overs with the Contracting Officer and Ellsworth AFB.

The Contractor shall convert the remainder of the overhead portion of circuit 6 in front of the existing 34th Squad Ops facility to an underground duct bank and services. This includes but is not limited to; four poles, 3 spans of conductor, and one pole mounted transformer service to building 8304.

1.5 EXTERIOR UNDERGROUND PRIMARY ELECTRICAL DISTRIBUTION SYSTEM

The existing base primary electrical distribution system is a 12470/7200 volt grounded Wye, 3-phase, 4-wire plus ground, 60 Hertz underground distribution system. All new distribution primary lines will be installed underground in a concrete encased duct bank. Contractor shall route new manhole/concrete encased ductbank system as generally shown on the Site Plan. Contractor shall install new primary lines sized as indicated on the drawings. Contractor shall terminate new primary power cable with load break elbows. Provide fault indicators on primary cable. New electric power manholes shall be provided as indicated in this description, as referenced on Site Plan, at 90 degree turns, and at distances as determined by allowable cable pulling tension calculations or a maximum distance of 375 feet. Exterior primary distribution system shall be designed and specified in accordance with UFGS Electrical Distribution System, Underground SECTION 16375A; Ellsworth AFB Engineering Criteria, Chapter 4 (Attachment 23) and the requirements of this section.

1.5.1 Medium Voltage Cables

The primary cable shall be 15kV rated cable with 133 percent insulated copper conductors (EPR), 95kV BIL rated in concrete encased duct. Circuits shall be sized as indicated on the utility plan and conform to the requirements of NEMA WC 8 and AEIC CS6. A 600 volt neutral shall also be installed in the same duct as the primary feeder and grounded at the pad mounted transformer.

1.5.2 Terminations and Splices

All primary load break elbows and termination kits shall be rated 15 kV and shall be 3M-5601 type or equal. No splices shall be allowed.

1.5.3 Pad-mounted Tamperproof Compartmental Transformers

The pad mounted transformer shall be a 12470 volt to 480Y/277 volt, three phase, delta-wye; oil-immersed unit (non-PCB), outdoor type with copper windings and conductors. Aluminum windings and conductors are NOT acceptable. Facility transformer shall be sized to have a minimum of 25%

spare capacity above the estimated maximum demand for the building at the time of facility turn-over to the government. Facility transformer shall be sized in accordance with the National Electrical Code and Section 12, Paragraph 9.2.5 of the Omaha District Design Guide ODDG (Attachment 9) using a Temperature Correction Factor of 0.925 and a Short Term Overload of 1.00, and manufacturer altitude derating. The transformer shall be a loop feed, dead front, internally fused with the lightning arrestors installed on the loop feed with load-break elbows. See Exterior Underground Secondary Electrical Distribution Requirements for transformer secondary distribution voltages. Transformer pad shall extend 12 inches beyond the edge of the transformer furnished. Transformer pad shall incorporate 36 inch deep below grade vault underneath the high voltage section of the transformer. Provide grounding conductor counterpoise around transformer pad and a grounding rod at each corner of the counterpoise with a minimum of two ground connections between the transformer and the counterpoise.

1.5.4 Equipment Enclosure

A new 15 KV Equipment Enclosure with load break elbows shall be provided to tap the primary feeder and provide branch circuits to serve the new 37th Squad Ops facility pad-mounted transformer and the existing 34th Squad Ops facility pad-mounted transformer. The equipment enclosure shall be similar to type UM33 in accordance with Ellsworth AFB Engineering Criteria, Chapter 4 (Attachment 23).

1.5.5 Manhole/Duckbank System

All new distribution primary lines will be installed underground in a reinforced concrete encased duct bank with not less than 2 X 5" PVC conduits. See Utility Plan for quantity of ducts required in each section of duct bank. The ductbank system shall be located not less than 42" below grade. Contractor shall install new primary line, in one of the duct bank conduits indicated above, refer to site utility plan for additional information. Refer to Ellsworth AFB Engineering Criteria, Chapter 4 (Attachment 23) for additional information on manholes and ductbanks.

1.6 EXTERIOR UNDERGROUND SECONDARY ELECTRICAL DISTRIBUTION REQUIREMENTS.

Exterior secondary electrical distribution system to the facility shall be 480Y/277 volt, 3-phase, 4-wire underground feeder in conduit to a Main Switch Board (MSB) located in the electrical room. Main facility feeder and main distribution panel shall be sized to have a minimum of 25% spare capacity with 25% spare circuit breakers (sized to match design circuit breakers) above the estimated maximum demand for the building at the time of facility turn over. Design of the exterior secondary electrical system shall be in accordance with UFGS Electrical Distribution System, Underground - SECTION 16375A and the requirements of this section.

1.6.1 Underground Service Entrance/Feeder/Branch Circuits.

Service entrance conductors, branch and feeder circuits shall be single conductor cables, Type THW, THWN, or USE in accordance with NFPA 70. Service entrance conductors and underground feeder/branch circuits shall be copper conductors with insulated grounding conductor in conduit. Aluminum conductors and direct buried cables are NOT acceptable. Type USE conductors shall not be permitted to enter the building due to the possible lack of a flame retardant covering on the conductor.

1.6.2 Underground Conduits

Service Entrance conduits shall be PVC coated rigid galvanized steel (PRGS). Underground branch circuit and feeder conduits located within 5 feet of the facility shall be PVC coated rigid galvanized steel (PRGS), transitioning to schedule 80 PVC conduit outside of the 5 foot perimeter. Low voltage conduits shall be concrete encased where routed under paved and unpaved vehicular areas, and non-encased direct-burial for all other areas. Top of conduit shall be no less than 25 inches below finished grade.

1.7 EXTERIOR LIGHTING SYSTEM.

Exterior lighting systems are critical for safety, security, and facility aesthetics. The designer shall consider these issues when selecting and locating fixtures. Information contained within this RFP is to be used for minimum design performance. Area lighting shall be provided for all parking lots, all walkways, and above all exit doors. Quantities and locations of light poles and bollards shown on the Site Plan are for reference only. The exact quantity and locations of all exterior lighting are to be determined by the contractor during design. Lighting fixtures shall utilize high pressure sodium lamps. Fixture/pole finish shall be anodized bronze unless otherwise noted. The design of the lighting poles shall take into consideration that the yearly average maximum wind speed (50 year average) is 85 mph, with a gust factor of 1.3. Design shall be in accordance with IES Handbook, UFGS Exterior Lighting Specification SECTION 16528A, Electrical Distribution System, Underground Specification SECTION 16375A and the requirements in this section.

1.7.1 Area Lighting

Area lighting shall be provided for all areas noted above. Illumination levels shall be measured at 6 inches above finished grade. Area lighting contactors and controls for the building shall be installed in the main electrical room. Reference paragraph "Exterior Lighting Control" below.

1.7.1.1 Walkway Lighting

Illumination levels for walkways shall be 0.5 foot candles minimum horizontal maintained with an maximum-to-minimum luminance ratio not to exceed 15:1. Walkway lighting fixtures shall be bollard type fixtures (COE type EH11) and shall be placed along walkways. Lamps shall be high pressure sodium and shall be sized to meet lighting criteria and the most economical installation. Fixtures shall be spaced uniformly throughout the project site. Walkway lighting shall be operated by the facility Exterior Lighting Control system referenced below.

1.7.1.2 Parking Lot Lighting

Illumination levels for parking areas shall be 0.5 fc minimum horizontal maintained with a maximum-to-minimum luminance ratio not to exceed 15:1. Parking lot lighting fixtures shall be single arm or double arms mounted on 30 to 35 foot square steel pole (COE type EH1). Lamps shall be high pressure sodium and sized to meet lighting criteria and the most economical installation. Poles shall be located outside the parking lots behind the curbs, or within parking "island" curbs. Poles shall have cast-in-place concrete bases extending 36 inches above finished grade to prevent damage from vehicles. Parking lot lighting shall be operated by the facility Exterior Lighting Control system referenced below.

1.7.1.3 Exterior Building Lighting

Illumination levels for areas adjacent to all building entrances shall be 5.0 fc minimum horizontal maintained. Lamps shall be high pressure sodium and sized to meet lighting criteria and the most economical installation. Provide recessed soffit mounted lights on the front and north side of the building in all areas with soffits (Similar to Prescolite RHD series). Wall packs may be used on the back and south side of the building (Similar to McPhilben 110 series). Building lighting shall be operated by the facility Exterior Lighting Control system referenced below.

1.7.2 Exterior Lighting Control

Provide metal exterior lighting control enclosure with HAND-OFF-AUTOMATIC switch, lighting contactors, and digital time clocks. Lighting contactors shall be controlled from a photocell "ON" and digitally operated time clock "OFF" system, with HOA switch bypass. Provide independent control capability for 1) parking lot lights, 2) covered parking lights, 3) building / walkway lights. Exact location of all lighting controls, such as enclosures and photocells, shall be shown on design plans. Locate photocell in discrete location in the exterior Mech/Elec Equipment yard.

1.7.3 Underground Lighting Circuits

Provide underground branch circuits for all exterior lighting circuits. Branch circuits shall be insulated copper conductors with insulated grounding conductor in conduit. Aluminum conductors are NOT acceptable. Direct buried conductors are NOT acceptable. All underground lighting conductors shall be in rigid galvanized steel (RGS) conduit and PVC conduit as referenced in the Underground Conduits paragraph of this section. Top of conduit shall be at least 25 inches below finished grade.

1.7.3.1 Lighting Pole Grounding

All exterior lighting poles and bollards shall be grounded at the concrete base. Provide a ¾" diameter x 10 feet long copper clad grounding rod at each concrete fixture base.

1.7.3.2 Conductors

Conductors shall be copper with type THHW or THWN insulation conforming to UL 44. Provide a green grounding conductor for all circuits. Conductors shall be rated for 600 volts. Parts of the conductor system such as splices and terminations shall be rated not less than 600 volts. Conductors larger than No. 6 AWG shall be stranded. Size conductors based on allowable voltage drop per the NEC.

1.7.4 Building Exterior Lighting Circuits

All lighting fixtures mounted to the exterior of the building shall be wired from within the building and shall conform to the Interior Wiring Methods paragraph of this section. No building lighting circuits shall be surface mounted. All exterior lighting circuits shall be controlled by the exterior lighting control system.

1.8 EXTERIOR GOVERNMENT COMMUNICATION DISTRIBUTION SYSTEM

This design shall be in accordance with the UFGS Telephone System, Outside Plant Specification SECTION 16711A, Electrical Distribution System, Underground Specification SECTION 16375A, Communication Requirements for the 37th BS Complex (Attachment 21), Underground Distribution Policy (Attachment 19) and the requirements of this section.

1.8.1 Communications Ductbank/Manholes

New communications duct bank shall consist of 4 X 4 inch conduits, provide a quad innerduct in one of the 4 inch conduits for installation of fiber optic cables. Conduits shall be encased in concrete where traversing roadways and parking lots. Minimum burial depth shall be 42" below finished grade. New communications manholes shall be provided. Distance between manholes shall not exceed 250 feet. Outside plant telephone and data cabling shall be Government Furnished, Government Installed (GFGI).

1.9 CATHODIC PROTECTION SYSTEM

A sacrificial anode cathodic protection system shall be provided for all underground metallic lines, fittings, valves and fire hydrants. In addition to the anodes, all metallic pipes must be provided with a coating system. The systems shall be designed and installed in accordance with NACE RP 169 Standards. A NACE "Cathodic Protection Specialist" certified corrosion engineer shall design the cathodic protection system. Criteria for determining the adequacy of protection shall be in accordance with NACE RP-01-69 and shall be selected by the corrosion engineer as applicable. Design shall be in accordance with Cathodic Protection System, (Sacrificial Anode) - UFGS SECTION 13110A and the requirements of this section. At least one test station shall be provided on each valve, fire hydrant and metallic pipe. Test stations shall be provided with concrete maintenance pad. All anodes shall be connected to structure or protected system through a test station. Insitu resistivity values of 10,000 to 30,000 ohm-cm shall be adjusted based on NACE projected soil changes caused by fertilization and landscape irrigation.

1.10 UNDERGROUND CABLE MARKINGS

A color-coded plastic warning tape at least 4" wide shall be placed within the trench above all buried utility lines and ducts. RED shall be supplied for the buried electrical lines and ORANGE shall be supplied for all the buried communication lines.

1.11 INTERIOR ELECTRICAL DISTRIBUTION SYSTEM

The interior secondary distribution voltage within the building shall be 480Y/277 volt, 3-phase, 4-wire. All conductors and buses shall be copper. Aluminum is NOT acceptable. The higher voltage (480 volts) shall be used for larger motor loads, equipment loads and all other required loads. The lower voltage (277 volts) shall be used for all lighting loads. Provide step down transformers and distribution panels to serve branch panels for all 208Y/120 volt receptacle loads, small motor loads, computer loads, and all other loads as required. Provide dedicated panels for all computer receptacle loads. All portions of the distribution system shall be designed to the maximum demand load plus 25% spare capacity and 25% spare circuit breakers (sized to match design circuit breakers) at the time of facility turn over. The design Oneline Diagram shall denote the available fault currents above 10,000 amps at each node of the distribution system. Design calculations shall be provided for voltage drop at each node of the distribution system with the

25% spare capacity. Each phase, neutral and equipment grounding bus shall be clearly shown on the design drawing Online Diagram. Design shall be in accordance with UFGS Electrical Work, Interior - Specification SECTION 16415A and the requirements of this section.

1.11.1 Service Entrance

The facility service entrance shall employ copper conductors in plastic coated rigid steel conduits which terminate in a multiple section Service Entrance rated Main Switch Board (MSB) with attached distribution sections. All main and distribution sections shall employ metal enclosures, copper buses and molded case circuit breakers. Aluminum is NOT acceptable. Neutral buses shall be sized at a minimum of 100% phase bus capacity. Service entrance voltage shall be 480Y/277 volt, 3-phase, 4-wire with ampacity not less than the maximum demand load per the NEC plus 25% spare capacity and 25% spare circuit breakers (sized to match design circuit breakers) at the time of facility turn-over. Service entrance conduit and conductors shall enter the switchboard from below grade. Switchboard shall be provided with main disconnecting circuit breaker, ground fault protection as required by the NEC, integral Transient Voltage Surge Suppression (TVSS), and integral KWHR/demand metering as identified in this section. Switchboard name and section, and each load shall be identified with engraved plastic labels.

1.11.2 Generator Backup.

The facility shall be provided with a means to manually connect a GFGI portable generator to switch board MSB. Provide a manual transfer switch on the load side of the main disconnect switch and metering to transfer the building load to the GFGI portable generator. Power distribution blocks shall be provided in a weather proof enclosure on the exterior of the building for connection of the generator.

1.11.3 Distribution Panels

Distribution panels shall be provided as required to serve branch panel boards, large multi-phase loads, and mechanical equipment loads. Provide a Mechanical Distribution Panel(s) to serve all large mechanical loads, 480Y/277 volt mechanical branch panels, step-down transformers for 208Y/120 volt mechanical equipment, etc. Distribution panels shall employ metal enclosures, copper buses and molded case circuit breakers. Aluminum is NOT acceptable. Neutral buses shall be sized to 100% capacity unless the distribution panel serves non-linear loads in which case a 200% rated neutral bus/feeder shall be provided. Distribution panels and associated feeders shall be sized not less than the estimated maximum demand load plus 25% spare capacity and 25% spare circuit breakers (sized to match design circuit breakers) at the time of facility turn-over. Distribution panel names and each load shall be identified with engraved plastic labels.

1.11.4 Branch Circuit Panel Boards

Branch circuit panel boards shall be provided as required to serve branch circuit loads. The maximum allowable ampacity for 480Y/277 volt branch panels is 400 amps. The maximum allowable ampacity for 208Y/120 volt branch panels is 225 amps. Branch circuit panels shall employ metal enclosures, copper buses and molded case circuit breakers. Aluminum is NOT acceptable. Each branch circuit panel board shall be provided with main circuit breaker disconnect unless the feeder disconnecting means for the respective panel is readily accessible (as defined by the NEC). Branch circuit panels shall

employ 100% rated neutral buses unless the panel serves non-linear loads in which case a 200% rated neutral bus/feeder shall be provided. Branch circuit panels and associated feeders shall be sized not less than the estimated maximum demand load plus 25% spare capacity and 25% spare circuit breakers (sized to match design circuit breakers) at the time of facility turn-over. Branch circuit panel names shall be identified with engraved plastic labels. Each branch load shall be identified on a printed panel label in the panel cover. Provide Transient Voltage Surge Suppression (TVSS) for each 208Y/120 volt branch circuit panel. TVSS devices shall be housed in a manufacturer and UL approved panel board extension. Branch circuit panel boards shall conform to NEMA AB-1 and UL 489 and shall be located only in facility electrical and mechanical rooms. Load-center type panel boards are not acceptable. Panel boards shall not exceed 80 inches in height from the finished floor. Panel boards shall contain 25% spare circuit breakers at the time of facility turn-over to the government. Spare circuit breakers shall be redundant of the type of circuit breaker being provided in the panel board. Half space circuit breakers are NOT acceptable. Design shall balance loads between all panel phases to 10% maximum deviation.

1.11.5 Step Down Transformers

Dry-type step down transformers shall be provided to convert 480 volt delta to 208Y/120 volt, 3-phase, 4-wire power. Transformers shall employ copper windings and conductors. Aluminum is NOT acceptable. Transformers shall be sized for the maximum demand load served plus 25% spare capacity at the time of facility turn over. Transformers serving non-linear loads shall be K-Rated for the loads served, K-Ratings shall not be less than K-13. Transformers shall employ a temperature rise of 300 degrees F over 100 degrees F above ambient. Transformers over 112.5kVA shall have a Class 155 or higher insulation system and shall be completely enclosed except for ventilation openings.

1.11.6 400 Hertz Converter

400 hertz converter shall be provided to convert 480 volt 3-phase 60 hertz power to 230 volt 3-phase 400 hertz power. Converter shall be sized for the maximum demand load served plus 25% spare capacity at the time of facility turn over.

1.11.7 KWHR/Demand Meter

Metering shall comply with Engineering Technical Letter (ETL) 94-2: Utility Meters in New and Renovated Facilities. KWHR meters with 15 minute demand registers shall be provided for recording power consumption of the facility. Meters shall be provided with pulse initiators for connection to the BASE EMCS - (Energy Monitoring and Control System).

1.11.8 Transient Voltage Surge Suppression

- a. Transient Voltage Surge Suppression (TVSS) shall be provided at the main Switch Board and for each branch circuit panelboard. Surge suppressors shall meet the requirements of IEEE C62.41 and be UL listed and labeled as having been tested in accordance with UL 1449, second edition. The Main Switch Board TVSS shall employ field replaceable protection modules for each phase. The Main Switch Board TVSS shall be integrated into MSB cabinet and buses, with semi-flush mount reporting devices; provide integral disconnecting means with the TVSS. Branch Panel Board Protection TVSS devices employed at branch circuit panels shall be housed in branch circuit panel extension fully compatible with panel and

approved by UL and panel manufacturer for such use. Provide a dedicated 30A/3 pole circuit breaker on branch panel boards for TVSS disconnection means. The operating frequency range of TVSS units shall be 47 to 63 Hertz. Provide TVSS unit with digital surge/hit counter, loss of protection alarm, and visual indication of protection mode status.

- b. Protection Modes: In accordance with NEMA Standard LS 1-1992, the unit shall provide protection in all modes. Wye-configured systems shall provide Line-to-Neutral, Line-to-Ground, and Neutral-to Ground protection.
- c. Single Pulse Surge Current Capacity: Based on IEEE C62.41 and in accordance with NEMA Publication No. LS 1-1992. The tested single pulse surge current capacity, in amps, for each mode of protection of the unit shall be no less than as follows:

MODE OF PROTECTION	L-N	L-G	N-G
Tested Single Pulse			
Surge Current Capacity (480Y/277 MSB)	300 KA	300 KA	300 KA
Surge Current Capacity (208Y/120 Panels)	100 KA	100 KA	100 KA

- d. Minimum Repetitive Surge Capacity: Based on IEEE C62.45, the minimum repetitive surge current capacity, in number of surges, for each mode of protection of the unit shall be no less than as follows:

e.

MODE OF PROTECTION	L-N	L-G	N-G
Tested Minimum Repetitive Pulse			
Surge Current Impulse (480Y/277 MSB)	7000	7000	7000
Surge Current Impulse (208Y/120 Panels)	4000	4000	4000

- f. Unit Suppression Voltage Ratings: The unit's published suppression voltage ratings shall be the UL 1449 listed suppression voltage ratings tested and assigned by Underwriters Laboratories. The UL 1449 suppression rating for each mode of protection shall be as follows:

MODE OF PROTECTION	L-N	L-G	N-G
(480Y/277 MSB)	800V	800V	800V
(208Y/120 Panels)	400V	400V	400V

- g. High Frequency Extended Range Power Filter: The unit shall include a high frequency extended range power filter and shall be UL 1283 listed as an Electromagnetic Interference Filter. The filter shall reduce fast rise-time, high frequency, error-producing transients and electrical noise to harmless levels, thus eliminating disturbances which may lead to electronic system upset. The filter shall provide minimum noise attenuation as follows:

ATTENENUATION FREQUENCY	100Khz	1MHz	10mhz	100mhz
Insertion loss (ratio)	50-1	350-1	500-1	250-1
Insertion loss (dB)	34	51	54	46

- h. Overcurrent Protection: TVSS units shall incorporate UL 489 or UL 198 listed or recognized overcurrent protection devices for each MOV. MOV's shall be encapsulated in a silica filled housing. Suppression filter systems with integral fused disconnect shall withstand available short circuit current of facility. Suppression filter systems that utilize

fusing as overcurrent protection shall incorporate non-encapsulated, field-replaceable fuses.

1.11.9 Motors

Motors shall be of sufficient size for the duty to be performed and shall not exceed the full-loading rating when the driven equipment is operating at specified capacity under the most severe conditions encountered.

- a. All motors shall have open frames and continuous-duty classification and be based on a 100 degree F ambient temperature reference.
- b. All motors shall be derated for altitude.
- c. All permanently wired polyphase motors of 1 hp or more shall meet the minimum full-load efficiencies as indicated in the UFGS Electrical Work, Interior, SECTION 16415A.
- d. Motors used on Variable Frequency Drives (VFD's) shall be manufacturer classified for inverter use and have corresponding insulation system for given application.

1.11.10 General Purpose Receptacles

Duplex receptacles for general purpose applications shall be 20 amp, 125 volt, 2-pole, 3-wire grounding type. All receptacle circuits shall use 20amp rated circuit breakers, unless otherwise limited by the NEC. A maximum of nine duplex general purpose receptacles may be connected to a receptacle circuit, however, 5-8 receptacles is the preferred range for most circuits. Where the circuit is intended for shop type equipment (such as electric drills, soldering irons, woodworking equipment, etc.), maintenance equipment, appliances, or test instrumentation, provide a maximum of one or two receptacles per circuit. Receptacle circuits shall not supply lighting loads. General purpose duplex receptacles shall be located in the facility as follows:

- a. Provide general duplex receptacles every 12 feet along the walls in all areas of the building except corridors, stairs, vestibules, High Bay Storage Areas, and mechanical/electrical rooms. For corridors, locate receptacles every 50 feet along one side of the corridor; provide at least one receptacle per corridor. For stairs, provide one receptacle per floor landing. For vestibules wider than 12 feet provide one receptacle per sidewall; for stairs less than 12 feet wide provide one receptacle. For high bay storage areas provide one receptacle every 20 feet along the walls and on all columns located in the center of the areas. For mechanical/electrical rooms, provide ground fault interrupting (GFI) receptacles every 20 feet along perimeter walls, provide no less than two GFI receptacles per room. For small rooms that do not have 12 feet long walls, a minimum of one (1) outlet shall be installed on each wall greater than 3 feet long, walls under 3 feet long do not require receptacles. Receptacles shall be mounted 18 inches above finished floor.
- b. Provide a general purpose duplex receptacle adjacent to each mirror for side sink positions located in the restrooms, restrooms with only one sink shall be provided with only one receptacle. Where mirrors are located other than above sinks, provide additional receptacles to accommodate hair dryers. All restroom receptacles shall have (GFI) ground fault interrupters. Mount receptacles 4 feet above finished floor.

- c. Provide dedicated duplex receptacle and circuit for each vending machine to be installed by the government in the vending areas.
- d. Provide dedicated duplex receptacles at each break area counter one for each coffee machine, microwave oven, and switched disposal.

1.11.11 Special Receptacles

Exact location of the receptacles noted below shall be coordinated with the USER during the design of this project. Provide 20 amp, 125 volt, 2-pole, 3-wire grounding type, duplex receptacles (or as noted) in the following locations:

- a. Exterior Ground Fault Interrupter (GFI) receptacles shall be rated at 20 amps and mounted in a box with a gasketed, weatherproof, cast-metal cover plate and gasketed cap over each receptacle opening. Provide exterior receptacles near each exterior door and at intervals not exceeding 50 feet around the perimeter of the building, locate exterior receptacles 24 inches above interior finished floor elevation.
- b. Provide Ground Fault Interrupter (GFI) receptacles for all restrooms, all sink countertops, each janitor's closet and other wet locations.
- c. Provide a GFI duplex receptacle for each electric water cooler. Two coolers may be served by a single 20 amp circuit.
- d. Provide one dedicated 20 amp, 125 volt, 2-pole, 3-wire duplex receptacle for each EMCS OR DDC panel. Each receptacle provided for the EMCS panels shall have a dedicated branch circuit.
- e. Provide one dedicated 20 amp, 125 volt, 2-pole, 3-wire quadraplex receptacle for each LAN rack. Receptacle provided for each LAN rack shall have a dedicated branch circuit and ground.
- f. Provide one dedicated 20 amp, 125 volt, 2-pole, 3-wire quadraplex receptacle for each telephone backboard. Receptacle provided for each backboard rack shall have a dedicated branch circuit and ground.
- g. Provide dedicated 20 amp, 125 volt, 2-pole, 3-wire duplex receptacle and circuit for each government furnished and government installed copier and each fax machine:
- h. Provide dedicated 20 amp, 125 volt, 2-pole, 3 wire, weather proof duplex receptacle for each vehicle engine heater.
- i. Provide a minimum of two 115 volt single phase 400 hertz receptacles in the TMDE/Tools room at the workbench area. Coordinate amp rating and receptacle configuration with user.
- j. Provide a minimum of two 230 volt three phase 400 hertz receptacles in the TMDE/Tools room at the workbench area. Coordinate amp rating and receptacle configuration with user.

1.11.12 Computer Power Receptacles

Computer receptacles shall be duplex, 20 amp, 125 volt, 2-pole, 3-wire grounding type connected to dedicated panelboards. A maximum of two computer stations shall be connected to a receptacle circuit. Circuits shall be sized using 600 volt-amp per computer station. Shared neutral conductors shall be

sized no less than 172% of the phase conductors. Computer receptacles shall be labeled as "COMPUTER". Mount the outlets 18 inches above finished floor. Computer receptacles shall be mounted adjacent to all Telephone/Data jack assemblies. Maintain a separation of 6 inches from the Telephone/Data jack assemblies. In general, provide computer receptacles for all workstations shown on the CID furniture layout plan. In addition all private offices shall be provided with a minimum of two computer receptacles located on opposite walls. Provide (within the base bid) rough-ins and all pre-wiring, electrical outlets, and terminating face plates - for all O&M funded computer equipment (including options, even if the option is not awarded). Exact location and quantity of all computer receptacles shall be verified and coordinated with the Contracting Officer during the design of the project.

1.11.13 Other Loads

Contractor shall provide electrical power / branch circuits to all devices and hardware where required to provide complete and operable systems. Connections shall be by receptacle, or direct-wired, as applicable. Coordinate all requirements with the equipment supplied. Provide (within the base bid) rough-ins and all pre-wiring, electrical outlets, and terminating face plates - for all O&M funded equipment (including options, even if the option is not awarded). Systems include, but are not limited to, the following:

- a. Government Furnished, Government Installed (GFGI) Pre-wired Modular Furniture Systems.
- b. Auditorium pre-wired seating
- c. Auditorium podium
- d. Smart Boards
- e. Electric door operators
- f. Motorized video projection screens
- g. PA system
- h. Video projectors
- i. CCTV system
- j. Appliances
- k. Ice maker
- l. Vending machines
- m. Photo Copy Machines
- n. Fax Machines
- o. Beverage counter in heritage room
- p. Vehicle engine heaters in covered parking
- q. Air compressor
- r. Bridge crane

Also refer to (Mechanical) SECTION-01006, Paragraph, 1.2.1, Facility Description, for a facility List of Rooms and user equipment.

1.11.14 Architectural/Mechanical Connections

Contractor shall provide branch circuits, disconnect switches, magnetic starters, and all other related electrical equipment and material for all architectural, mechanical equipment and environmental equipment to be installed in the project (includes the facility and site). This shall include all HVAC units, chillers, EMCS/DDC controls, VAV's, unit heaters, pumps, exhaust fans, all other mechanical equipment in the facility and all O&M funded options even if the option is not awarded. Urinals, toilets, sinks, and hand dryers that are controlled by passive infrared sensors are to

be hard wired to the building electrical distribution system. No batteries shall be allowed for this purpose. Contractor shall coordinate this electrical requirement with the architectural and mechanical requirements.

1.12 INTERIOR LIGHTING SYSTEM

The interior design shall be in accordance with the requirements in this section, the IES Handbook, and UFGS Electrical Work, Interior SECTION 16415A.

1.12.1 Illumination Levels

Maintained illumination levels shall not be less than the values listed below. The illumination levels are calculated to desk height of 2.5 feet in all offices and office work areas. Equipment, mechanical, electrical, communication, storage, maintenance areas, and corridors shall have the illumination level calculated to the floor level. The illumination levels identified shall be maintained design intensity, including light loss factors. Fixture light loss factors shall include dirt depreciation of 0.85, lamp lumen depreciation based on 50% of lamp life, and ballast factor for proposed ballast.

<u>ROOM TYPE</u>	<u>INTENSISTY (fc)</u>
Auditorium	50
Break room / Kitchen	50
Conference rooms	50
Copier area	30
Corridors	20
Communication Rooms	50
Electrical Rooms	30
Heritage Room	30
High Bay storage areas	50
Janitor Closets	10
Lobby	20
Mechanical Rooms	30
Offices Areas	50
Ready Room	50
Restrooms	30
Storage rooms	20
Vending areas	30
Vestibule	20

1.12.2 Light Fixture Controls / Energy Conservation

Illumination levels in conjunction with energy conservation, shall be obtained by the most life cycle cost-effective techniques including, but not limited to the following:

- a. Provide multiple level switching of multi-lamp fixtures or multiple switching of fixture groups in large rooms, or both, to permit lighting fixtures to be turned off or reduced in illumination in unoccupied areas. Note that a switch shall be allowed to only control lighting within a single room.

- b. Location of light switches shall be coordinated with the floor plan and furniture layout to ensure that they are easily accessible and convenient. Location shall be coordinated with COR during design.
- c. All fluorescent lamps shall be low mercury TCLP compliant.

1.12.3 Fluorescent Fixtures

Fluorescent light fixtures with T8-32watt, or compact fluorescent lamps shall be used in all areas of the building. All fixtures shall employ electronic ballasts with less than 10% THD and power factor exceeding 95%. Type of fixture shall be COE standard light fixtures and/or as defined below. For areas not listed provide COE standard light fixtures appropriate for the area being served. See architectural reflected ceiling plan for tentative locations of light fixtures. Exact locations and quantities are to be determined by the contractor during design. See Attachment 22 for light fixture cut sheets.

- a. Conference rooms. - Dimmable compact fluorescent controlled by wall mounted dimmers (COE type RF2 or RF3).
- b. Corridors. - Pendant mounted direct/indirect fluorescent (Similar to Louis Poulsen Oslo Pendant series) combined with fluorescent strip fixtures mounted on top of the cross corridor dry wall beam features to illuminate the upper corridor ceiling area.
- c. Auditorium. - Dimmable compact fluorescent controlled by a dimmer system or wall mounted dimmers (COE type RF3).
- d. Main lobby. - Linear strip cove lighting around perimeter of lobby in cove ribbon to provide uplight continue cove lighting around vestibule on top of lid (Similar to Elliptipar Style 301) combined with compact fluorescent down lights (COE type RF2).
- e. Heritage Room. - Dimmable compact fluorescent pendant mounted dome fixture with wire guard and galvanized finish controlled by wall mounted dimmer switches (LSI Abolite Lighting RD 300 series). Provide same fixture at lower height over pool table, between front and back bars, and behind bar canopy. Low voltage small profile track or individual mounted accent lighting to highlight feature areas such as the bar, displays, art work, etc (Similar to Prescolite SignosT ArchiTrak series). Cove lighting (Similar to Elliptipar Style 301).
- f. High Bay storage areas. -Fluorescent high bay luminaries with T5 HO lamps (Similar to Daybrite FHB series). Provide lighting above and below the temporary storage platform in the COSO storage area.
- g. Office areas. - 2 foot by 2 foot recessed indirect with 40 or 50 watt bi-ax as required (Similar to COLUMBIA STR series).
- h. Mission Planning. - 2 foot by 2 foot recessed indirect with dimming ballasts controlled by wall mounted dimmers (Similar to COLUMBIA STR series).
- i. Ready Room. - Linear fluorescent indirect with semi-perforated housing air craft cable suspended fixtures (Similar to ALERA ASC series). Fixtures shall be mounted at constant elevation above finished floor. Cove lighting (Similar to Elliptipar Style 301).

- j. Display cases. - Linear fluorescent strip lighting with parabolic louvers integral with the display cases (Similar to COLUMBIA NP series).
- k. Wall mounted art / murals / photographs. - Low voltage small profile track mounted accent lighting to highlight wall displays (Similar to Prescolite SignosT ArchiTrak series).
- l. Utility type spaces without ceiling such as mechanical, electrical, communications, janitor. - 4 or 8 foot Fluorescent industrial light fixtures with wire guard. (COE type PF6 or PF7)
- m. Utility type spaces with ceilings such as storage rooms, break rooms, and rest rooms. - 2 foot by 4 foot Fluorescent light fixtures with prismatic lenses. (COE type RF9)

1.12.4 Incandescent Lighting Fixtures.

Incandescent lighting fixtures may be used for accent lighting only.

1.12.5 Exit and Egress / Emergency Lighting Fixtures

Egress, exit and emergency lighting design shall be in accordance with NFPA 101. Egress, exit and emergency lighting fixtures shall be powered from battery backed ballasts and power supplies local to each fixture. Exit lights shall be LED type. Egress / emergency lighting fixtures shall be provided from room fluorescent light fixtures throughout the facility. Central battery/inverter systems are not acceptable. Wall mounted battery packs may be used in mechanical, electrical or storage areas only.

1.13 INTERIOR TELECOMMUNICATIONS SYSTEM AND SPECIAL SYSTEMS

1.13.1 Telecommunication System

All telecommunication (telephone and data) outlets shall be provided with a single gang face plate with four ports capable of accepting 8 position category 5e modular jack assemblies, unused ports shall have blank covers installed. All telecommunication cabling shall be category 5e, plenum rated and continuous without splices from wall jacks to termination block or patch panel. Electronic devices such as computers, file servers, hubs, concentrators, phones, phone switches, etc., are not part of this contract and will be furnished and installed by the USER. Facility design shall be in accordance with Communication Requirements for 37th BS Complex (Attachment 21), AFI 31-401, UFGS Premises Distribution System SECTION 16710A, Electrical Work, Interior SECTION 16415A and the requirements of this section. Cabling for telecommunication jacks shall not exceed 300 feet in length from wall plate to backboard or patch panel. Provide jack labels which identify jack position on telecommunication closet patch bay or punch block; provide label or designation for each jack to identify which telecommunication closet serves the jack. Design of the telecommunication systems, pathways and spaces shall be in accordance with TIA/EIA-568B Commercial Building Telecommunications Cabling Standard; TIA/EIA-569A Commercial Building Standard for Telecommunications Pathways and Spaces; TIA/EIA-607 Commercial Building Grounding and Bonding Requirements for Telecommunications; MIL-HDBK-419 Grounding Bonding and Shielding for Facilities; and MIL-STD-188-124C Grounding, Bonding and Shielding for Common Long Haul/Tactical Communications Systems.

1.13.1.1 Telephone Terminal Backboard

Provide ¾ inch plywood backboards on the wall in the Communication Rooms. Provide surge arrestors and 110 type cross connect blocks for the 400 pair Government Furnished Government Installed (GFGI) incoming telephone conductors. The plywood telephone backboard shall be provided with a fire retardant coating. Contractor shall coordinate location of incoming telephone service with the location of the surge arrestors and cross connect blocks on the telephone backboard. All underground conduits entering the Communication Room shall be stubbed up 6 inch above finished floor adjacent to the telephone backboard. The telephone service entrance cable will be Government Furnished Government Installed.

1.13.1.2 Telecommunication Cables /Conduits

All cables shall be installed in conduits and cable tray per Wiring Methods paragraph in this section. Concealed conduits shall be provided from each wall box to the cable tray system as identified in paragraph 1.15.4. All cables shall be tested per the requirements of UFGS Premises Distribution System Specification - SECTION 16710A, those cables failing to pass standards shall be replaced. All telephone cables shall be white in color, all data cables shall be blue in color.

Horizontal copper telecommunication cables shall be 24 gauge, 4 pair, Category-5e, unshielded twisted pair (UTP) solid copper cable. Terminate cables on jacks with EIA 568B sequencing.

Voice riser cables shall meet TIA/EIA Cat-3 requirements. Voice riser cables shall be sized for the full voice conductor count at the respective Telecommunications Closet, rounded up to the next 100 pair count.

1.13.1.3 Modular Telecommunication Outlets

Telecommunication outlets shall consist of a minimum of two data and one telephone jack and as a minimum shall be located by all workstations, printers, faxes and copy machines shown on the CID furniture layout plan. In addition all private offices shall be provided with a minimum of two telecommunication outlets located on opposite walls. An additional 20% data/phone inlets shall be provided; location to be determined by Contractor. Exact location and quantity of all telecommunication outlets, data jacks and telephone jacks shall be verified and coordinated with the Contracting Officer during the design of the project. Telephone jacks shall be used for voice communication and data jacks shall be used for data communication. Telephone jacks shall be white in color and labeled as "VOICE". Data jacks shall be blue in color and labeled as "DATA". Each wall plate shall be mounted 18 inches above finished floor, unless noted otherwise.

1.13.1.4 LAN Rack

Contractor shall provide one open 19 inch W x 84 inch H LAN rack and one enclosed 19 inch x 78 inch rack in the main Communication Room, the enclosed rack shall be dedicated for fiber optic patch panels and equipment, the open rack shall be dedicated for copper data patch panels and equipment. Contractor shall provide one open 19 inch W x 84 inch H LAN rack in each Communication Closet. All racks shall be provided with vertical cable management trays and removable side panels.

1.13.1.5 Cross Connect Cables

Provide multiple 50 pair #24 AWG telephone cables with 50 pin connectors at each patch panel and punch down the other end of the cable at the cross-

connect blocks. Support all telephone cables by ladder cable trays in the Communication Rooms.

1.13.1.6 Copper Backbone Cables

Provide 200 pair copper riser backbone cable from room 143 to room 220.

1.13.1.7 Fiber Optic Backbone Cables

Contractor shall provide plenum rated fiber optic cable with overall jacket between rooms indicated below. Terminate all fiber optic cables in rack mounted fiber optic patch panel with ST type connectors. Provide one fiber optic patch panel for each Communication Closet LAN rack. Coil 6 feet of spare fiber in each patch panel.

- a. 6 strand single-mode fiber optic cable from room 143 to room 118
- b. 6 strand single-mode fiber optic cable from room 143 to room 221
- c. 6 strand multi-mode fiber optic cable from room 118 to room 220

1.13.1.8 Fiber Optic Patch Panels

Fiber optic patch panels for the multi-mode fiber shall be rack mount panels with ST type connectors. Patch panels shall have integral fiber optic cable storage. Provide patch panels as noted herein.

1.13.1.9 Telecommunication System Topology

Route and terminate all phone and data drops by area to the following communication rooms.

- a. Unclassified data drops in Area B to room 118.
- b. Phone drops in Area B to room 143.
- c. Unclassified data drops in Area A to room 220.
- d. Classified data drops in Area A to room 221.
- e. Phone drops in Area A to room 220.

1.13.2 Public Address (PA) System

The facility Public Address system is an O&M funded option. Provide conduit and power support in base bid even if option is not awarded. The system shall be designed to provide complete coverage for all rooms in the facility. Provide individual room volume controls in all areas where appropriate including but not limited to private offices, and conference rooms. Coordinate all requirements with the COR.

1.13.3 Cable Television System

Provide cable television (CATV) infrastructure system capable of supporting local CATV provider equipment and signals. Coordinate coaxial backbone, riser, and horizontal cable types with local CATV provider; CATV cabling shall be plenum rated. Terminate CATV cable on flush wall plate with F-Type coaxial connector, locate wall plate on single gang flush mount box 18 inches above finished floor. Provide CATV cable home run from each wall plate as shown on Drawings A-1.01 and A-1.02 to CATV equipment enclosure. Route CATV cable in conduit from wall box into cable tray, through cable tray to conduit and into CATV enclosure. Size CATV enclosure per local CATV provider's requirements to accept all CATV cabling and CATV vendor provide distribution equipment. The CATV cabling system shall be continuous from wall plate to CATV enclosure, slices and splitters are not acceptable. Coil 6 feet of spare CATV cable in CATV enclosure. Locate dedicated double duplex

receptacle in CATV enclosure for CATV provider equipment. Provide dedicated grounding bus on insulating bushings in CATV enclosure, provide grounding conductor from CATV ground bus to facility electrical service entrance ground.

1.13.4 Video Teleconferencing System

Provide all power and control connections and conduits as required to support the video teleconferencing system. The system is located in Control room, the Auditorium and the Commanders Conference room.

1.13.5 Master Clock System

Provide electronic digital time-zone master clock system for the following areas; Commanders Conference room 255, Mission Debriefing room 230, Auditorium 224, Duty desk 202, and MA Ready room 119. Clocks shall be 4-inch segmented 24 hour LED digital with atomic time trimming multi-time zone type stations. Provide a graphite anodized aluminum finish. Zones shall be home - Ellsworth AFB, second - ZULU. Master clock system shall have a 3 year warranty. Locate the master clock station by the Duty desk.

1.13.6 Security System

A Intrusion Detection system (IDS) shall be provided for the secure area as defined on the drawings. The system shall consist of but not be limited to motion detectors for all spaces, balanced magnetic switches on certain doors (see Section 01003 ARCHITECTURAL BUILDING REQUIREMENTS) and protection of readily accessible windows. For Arms Room 107, a separate IDS system shall be provided, complete with keypad device to shut off the IDS system to allow entrance. The system shall be compatible with and monitored by the Base Security Police Facility. Dielectric fittings shall be provided on all noncurrent carrying metallic penetrations on the perimeter of the secure area. Duress alarms will be provided for the Arms Room, NVG room, Life Support Conference room and the Life Support area. The panel shall be located in Room 221. Contractor shall install the system and all wiring back to the panel, and shall mark the wires indicating which room they connect to; final wiring connections to the panel shall be by Others (N.I.C.). The IDS shall be designed in accordance with DOD 5200.1-R, Appendix 7, January 1997.

1.13.7 Mass Notification System

The building shall be provided with a mass notification system to provide the capability for real-time information to all building occupants during an emergency situation. The system shall be able to automatically deliver prerecorded messages or switch to live voice messages. The building system shall be connected to the base-wide notification system. Design and installation shall be in accordance with UFC 4-021-01.

1.14 EMCS (ENERGY MONITORING AND CONTROL SYSTEM)

The building shall be wired for EMCS (Energy Monitoring and Control System). All EMCS sensors will be installed per Mechanical specifications. See Mechanical Section 01006 for EMCS options and requirements. Provide 4 pair #24 AWG telephone conductors in 1 inch conduit from each EMCS OR DDC panel to the telephone patch panels located in the Communications closets/room. Provide power as required for all EMCS or DDC components (such as dampers, VAV boxes, control panels, etc.) requiring power. All EMCS wiring shall be installed in conduit from remote devices to DDC and control panels. All EMCS

wiring shall be provided in accordance with EMCS manufacturer's requirements for cable type, conductor size, distance limitations, etc.

1.15 WIRING METHODS

Wiring shall conform to NFPA 70, UFGS Electrical Work, Interior Specifications SECTION 16415A and the requirements of this section. All electrical wiring and cable, including EMCS wiring and control cable, shall be installed in conduit; excluded from this requirement is telecommunication cables (voice, data/LAN, paging, and CATV) which shall be placed in EMT conduit terminating at home-run cable tray.

1.15.1 Power Conductors

Conductors shall be copper only. Aluminum conductors are not allowed. Minimum conductor size shall be #12 A.W.G. Conductors shall be installed in conduits. Power and lighting conductors shall be 600 volt, Type THHN (in dry locations), and THW or THWN (in wet locations). Cabling systems such as Mineral-Insulated cables, metallic armored cables and nonmetallic-sheathed cables shall not be allowed on this project.

1.15.2 Communication Conductors

Communication conductors shall be provided per paragraph "INTERIOR ELECTRICAL DISTRIBUTION SYSTEM" of this requirement and UFGS Premises Distribution System, Specification Section 16710A.

1.15.3 Conduits

Wiring shall consist of insulated conductors installed in rigid zinc-coated steel conduit, electrical metallic tubing, intermediate metal conduit, and liquid tight flex conduit for motor connections. Plastic conduit is allowed only underground or under the floor slab unless otherwise identified. Raceways shall be concealed within finished walls, ceilings, and floors for all spaces unless otherwise identified. Exposed raceway may be used for mechanical and electrical rooms.

1.15.4 Cable Trays

Ladder style cable trays shall be provided for all telecommunication and special systems cabling. Cable trays shall be sized and grounded in accordance with the NEC and to allow 50% greater cable fill than is necessary at the time of facility completion. Conduits from wall mounted telecommunication outlet boxes (voice, data, CATV, etc.) identified in other paragraphs shall be routed into the sidewall of cable trays. Cable tray shall be routed above office area ceilings with accessible ATC ceiling. Cable tray will not be able to be located in the corridor due to exposed ceiling. Provide conduits concealed in corridor beam enclosures to provide cross corridor pathways for telecommunication cables.

1.16 GROUNDING SYSTEM

The grounding system shall be designed in accordance with NEC Article 250 and the following criteria. In general, all metallic building components including reinforcing steel and miscellaneous metals shall be part of an electrically continuous ground system. Steel studs used in interior wall construction, T bars of the ceiling grid, diffusers of the air distribution system, and door hardware are exempt from this bonding requirement. Bonding shall be by exothermic welding or the brazing of a copper wire between components. The facility grounding electrode system shall be no greater than

25 ohms. Design shall be in accordance with UFGS Electrical Work, Interior Specification - SECTION 16415A and this section.

1.16.1 Communication Grounding System

All exposed non-current carrying metallic parts of the telephone equipment, cable sheaths, cable splices and terminals shall be grounded. Contractor shall provide a 6" x 24" copper Master Ground Bus (TMGB) in the Main Communication Room per UFGS Premises Distribution System - Specification Section 16710A. Communication system grounding bars (TGB) shall be provided at each telephone backboard, each data/LAN rack, each page rack, and each CATV enclosure. Grounding bars (TGB) local to each Telecommunication Closets shall be interconnected with #4 AWG copper insulated grounding conductor. A dedicated insulated grounding conductor shall be routed from each Telecommunications Closet ground bar system (TGB) to the Master Ground Bus (TMGB). Grounding conductors shall be no less than #4 AWG copper, and no less than 10 ohms from Master Ground Bus (TMGB) to remote ground bars (TGB), whichever is more stringent. Grounding for the main telephone service shall be provided by installing an insulated #1 copper grounding conductor (minimum), or a ground conductor with a resistance of no less than 5 ohms in 1" conduit from the Master Grounding Bus (TMGB) to the building electrical service ground. All grounding shall be in accordance with the NEC, TIA/EIA-607, MIL-HDBK-419 volumes 1 & 2, MIL-STD-188-124C, and ACC Communication Wiring Policy.

1.16.2 Grounding Conductors

A green equipment grounding conductor, sized in accordance with NFPA 70 shall be provided, regardless of the type of conduit. Equipment grounding bars shall be provided in all panelboards. The equipment grounding conductors shall be carried back to the service entrance grounding connection or separately derived grounding connection. Grounding conductors shall be provided in all branch (including lighting circuits) and feeders circuits.

1.16.3 Earth Electrode System

The maximum resistance measured in accordance with IEEE STD 81 of a driven ground rod shall not exceed 25 ohms under normally dry conditions. Ground rods shall be 3/4" diameter x 10 foot long copper clad ground rods.

1.16.4 Equipment Grounding Bars

Provide a minimum of one copper equipment grounding bar at each workbench in the following rooms; TDME/Tools 145, Tool Storage 138, Admin Tech 156, and CCIM 251.

1.17 LIGHTING PROTECTION SYSTEM

A lightning protection system shall be provided in accordance with NFPA 780 and UFGS SECTION 13100A, LIGHTNING PROTECTION SYSTEM. All down conductors shall be concealed.

1.18 FIRE DETECTION AND ALARM SYSTEM

The fire detection and alarm system requirements are provided in Fire Protection Requirements SECTION 01008. Design shall be in accordance with Fire Detection and Alarm Specification, Addressable - SECTION 13851 and the requirements of Fire Protection Requirements SECTION 01008. Fire alarm system shall be addressable to each device, capable of complete and continuous operation for each device in the event of a single wiring break.

Hybrid systems which have addressable loops are NOT acceptable. Contractor shall provide all programming required at the facility and at the Fire Department to accommodate the facility fire detection and alarm system.

1.19 COVERED PARKING

1.19.1 Lighting

Provide surface mounted HID fixtures to illuminate the covered parking area (Similar to MOLDCAST MDL series). Illumination levels shall be 5.0 fc minimum horizontal maintained. Lamps shall be high pressure sodium and sized to meet lighting criteria and the most economical installation. Fixtures shall be controlled by the exterior lighting control system, see paragraph 1.7.2.

1.19.2 Power

Provide a minimum of 16 receptacles for engine heaters. Receptacles shall be Ground Fault Interrupter (GFI) receptacles rated at 20 amps, 120 volts and mounted in a gasketed, weatherproof, cast-metal box. Provide cover for wet location in use. Mount receptacles 48 inches above finished grade on east columns convenient to each parking space. Connect each receptacle to a dedicated 20 amp circuit.

1.20 SECURITY GATE and GUARD SHACK

Provide power/control wiring and connections to the motorized security gate control stations and guard shack. Provide power and telecommunications to the guard shack from the 37th squad ops facility.

1.21 TESTING

Contractor shall provide all testing required by all specifications provided to the Contractor. Testing shall include low voltage conductors, high voltage conductors and communication conductors and all other mandatory testing required by the specifications provided with this section.

1.22 TRAINING

Training courses shall be conducted for five (5) operating staff members designated by the Contracting Officer in the maintenance and operation of the Fire Alarm System. A training day is defined as eight (8) hours of classroom instruction, including breaks and lunchtime, Monday through Friday, during the daytime shift in effect at the training facility. For guidance in planning the required instruction, the Contractor shall assume that the attendees will have a high school education or equivalent, and are familiar with the systems. No training will be scheduled until training manuals and O&M manuals have been approved by the Government.

The course shall be taught at the project site for a period of four (4) training days. The training courses shall cover all the material contained in the Operating and Maintenance Instructions, the layout and location of each system and shall include the following for each system: preventive maintenance, troubleshooting, diagnostics, calibration, adjustment, commissioning, and repair procedures. Typical systems and similar systems may be treated as a group, with instruction on the physical layout of one such system.

The course shall be videotaped for future use by the owner. Provide two copies of the tape to the COR. Coordinate all requirements and format with the COR.

1.23 O&M FUNDED OPTIONS

As part of the base bid work the contractor shall provided all electrical and telecommunication support for all O&M funded options even if the option is not awarded. Support shall include but not be limited to electrical; receptacles, junction boxes, disconnect switches, etc. and telecommunication; jacks, wiring, conduit, etc.

PART 2 NOT USED

PART 3 NOT USED

- End of Section -

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SECTION 01008

FIRE PROTECTION REQUIREMENTS

PART 1 PROTECTION REQUIREMENTS

1.1 REQUIRED DESIGN CRITERIA

Fire protection shall be based on sound fire protection engineering principles that provides safeguards against loss of life and property by fire, consistent with the mission, risk involved, and economical utilization. Fire protection criteria shall be based on the code requirements listed below:

Some of these publications may be available to download in Acrobat PDF or MS Word file format at the following internet addresses:

<http://www.afcesa.af.mil/publications/ETLs/default/html>

<http://www.access.gpo.gov>

<http://www.access-board.gov>

<http://www.store.mil-standards.com>

<http://www.hnd.usace.army.mil/techinfo/index.asp>

<http://www.afcesa.af.mil/default.htm>

<http://www.e-publishing.af.mil>

<http://www.ccb.org/ufgs/ufgstoc.htm>

<http://www.dtic.mil>

International Building Code (2000 Edition)

NFPA 101 (Life Safety Code, 2000 Edition)

NFPA 72 (National Fire Alarm Code, 2000 Edition)

NFPA 13 (Installation of Sprinkler Systems, 2000 Edition)

NFPA 10 (Standard for Portable Fire Extinguishers, 2002 Edition)

UFC 3-600-01 (Fire Protection for Facilities Engineering, Design and Construction, 17 April 2003)

ETL-00-12 Fire Protection Engineering Criteria - Conversion of Fire Alarm Radio Systems to Narrowband Technology (19 Dec 2000)

ETL-99-4 Fire Protection Engineering Criteria and Technical Guidance - Emergency Lighting and Marking of Exits (9 Nov 1999)

TI 800-1 Design Criteria (20 July 1998)

ANSI/ASME A17.1 (Safety Code for Elevators and Escalators, 1996)

Uniform Federal Accessibility Standards (UFAS), Federal Standard 795

Americans with Disabilities Act (ADA Accessibility Guidelines)

ASTM E 84 -(Standard Test Method for Surface Burning Characteristics
of Building Materials, 2000 Edition)

All applicable requirements of the aforementioned codes shall be incorporated into the design. Life Safety Code, NFPA 101 relative to this design shall give special attention to the application of fire codes as they relate to Life Safety. Features of fire protection based on the following shall be included in the design: automatic operating devices; exiting for inhabitants and the protection of egress components; personnel safety in hazardous areas; appropriate ratings of partitions, doors and windows; travel distances; common paths of travel; occupancy types; hazard of occupancies and their contents; isolation from the remainder of the facility; fire and smoke control of vertical openings; location of fire extinguishers; etc.

Applicable requirements of the International Building Code shall also be included in the design. These shall include the following: types of construction; fire area limitations; increases to allowable floor areas; separation of structures; etc.

All military construction must comply with the code requirements set forth in UFC 3-600-01.

The Ellsworth Air Force Base Fire Department is the Authority Having Jurisdiction.

Technical information can be found at the following websites

<http://www.hnd.USACE.Army.mil>

<http://www.afcesa.af.mil>

1.1.1.1 Types of Occupancies and List of Hazardous Areas/Essential Equipment

1.1.1.1.1 Occupancy Classification

This project consists of one building and shall be a "Mixed Occupancy" as follows:

According to NFPA 101, the building shall be classified as a "Mixed" occupancy in accordance with Section 6.1.14. The majority of the building shall be classified as "Business" Occupancy in accordance with Chapter 38. The auditorium shall be classified as an "Assembly" Occupancy because of its occupant load per NFPA 101, Chapter 12. The large storage area at the south end of the building shall be classified as a "Storage" Occupancy because of its storage contents per NFPA 101, Chapter 42.

According to the International Building Code (IBC), the building shall be classified as a "Mixed" occupancy (with separated uses) in accordance with Section 302.3.3. The majority of the building shall be classified as a "Business" Occupancy in accordance with Section 304.1. The auditorium is considered an accessory use per IBC Sect. 302.2. The large storage area at the south end of the building shall be classified as an "S-2 Storage" Occupancy because of its storage contents per IBC, Section 311.3.

1.1.1.2 Classification of Hazard of Contents

The classification of hazard of contents shall be determined by the portion of each building which has the greatest hazard.

1.1.2 Separation of Structures

1.1.2.1 Exposure Classification

The building shall be a one story structure. The types of non-combustible roof construction options available for the facility shall be determined by the Proposer.

1.1.2.2 Separation Distance

IBC, Table 602 requires a separation of 10 feet, unless the exterior walls have a one hour rating.

1.1.3 Fire Fighting Support

The main fire fighting support shall be supplied by an automatic wet pipe sprinkler system. This fire protection and suppression system shall be tied into the building's fire detection and alarm system. The building shall be provided with fire extinguisher cabinets. These shall be located so that not more than 75 Feet of travel distance between fire extinguisher cabinets shall be required at any point in the facility. The fire extinguisher cabinets shall be of the fully recessed type in all finished areas.

In addition, an addressable fire alarm system shall be provided that covers the various parts of the building, monitoring of the fire sprinkler system, air handling units, etc.

See subsequent paragraphs of this Fire Protection section for additional information regarding fire suppression, detection, and other aspects of fire fighting support. Fire extinguishers are to be Contractor furnished/Contractor installed.

1.2 FUNCTIONAL AND TECHNICAL REQUIREMENTS

1.2.1 Construction for Fire Resistance of the Building Including Roofs, Walls, and Doors.

1.2.1.1 Building Construction Type

The building shall comply with a minimum II-B in accordance with IBC, Table 601.

1.2.1.2 Exterior Walls

Exterior walls of the facility shall be non-rated as long as minimum distances from other buildings are maintained.

1.2.1.3 Roof

The building roof covering shall meet Factory Mutual requirements for "Class 1" construction.

1.2.1.4 Interior Walls

One-hour fire resistive walls shall be constructed around the boiler room and elevator equipment room. Smoke partition walls shall be constructed around janitor's closets, mechanical rooms, electrical rooms, communications rooms etc, per NFPA 101, Section 8.4.1.1 from other parts of the building. All penetrations in fire rated walls (conduits, pipes, cable trays...etc.) shall be fire-proofed according to their respective wall/floor/ceiling rating, sealed at each penetration.

1.2.2 Type of Occupancies, Occupant Load, Exits, and Travel Distances to Exits

1.2.2.1 Occupancies

This is a "Mixed Occupancy" facility.

The facility shall be considered a "Business" Occupancy in accordance with NFPA 101, Chapter 38; the auditorium is an "Assembly" Occupancy per NFPA 101, Chapter 12; the Storage Area is a "Storage" Occupancy per NFPA 101, Chapter 42.

1.2.2.2 Occupant Load

For purposes of determining required exits, the occupant load shall be based upon the maximum number of persons intended to occupy that space but not less than NFPA 101, Chapters 8, 12 and 42. The actual expected occupant load for the entire facility is 400 persons; assume 75% male and 25% female.

Comply with NFPA 101, Chapter 12 for Assembly Occupancy provisions and exiting for the Auditorium and Storage area. Comply with NFPA 101, Chapter 38 for Business Occupancy provisions and exiting for the remainder of the facility.

1.2.2.3 Means of Egress

Not less than two exits shall be accessible from every part of the facility in accordance with NFPA 101.

1.2.2.4 Travel Distance to Exits

Allowable travel distance limits to exits shall be per NFPA 101, Section 38.2.6.

1.2.2.5 Allowable Floor Area

Allowable floor area limitations shall be in accordance with IBC, Table 503 and Section 507.2. Contractor shall determine construction type and apply the applicable portion of this code requirement. However, it is required that the entire building be provided with a 100% coverage automatic wet-pipe sprinkler system.

1.2.2.6 Maximum Building Height

Maximum height limitations are outlined in IBC, Table 503.

1.2.3 Fire Extinguisher Cabinets

The building shall be provided with fire extinguisher cabinets; these shall be located per NFPA 10 so that not more than 75 feet of travel distance to a fire extinguisher cabinet shall be required at any point in the facility. Fire extinguisher cabinets shall be of the fully recessed type in all finished areas such as administrative, conference, corridors, etc. Provide fire extinguisher brackets in all mechanical and electrical rooms near the exit doors.

1.2.4 Sprinkler Systems

1.2.4.1 System Description

A wet pipe sprinkler system shall be provided for 100% coverage of the building. System design shall be in accordance with NFPA 13, UFC 3-600-01 and UFGS Section 13930A, WET PIPE SPRINKLER SYSTEM, FIRE PROTECTION.

Hose stream demand, irrigation demand, and average hourly peak domestic water demand shall be added to sprinkler demand to determine hydraulically most remote area demand. The building shall have Light Hazard and Ordinary Hazard Occupancies with water flow demands criteria as follows:

a. Light Hazard - 0.1 gallons/min./square foot over the most hydraulically remote 3,000 square feet, with a 250 gallons/min. hose allowance.

b. Ordinary Hazard, Group 1 - 0.15 gallons/min./square foot over the most hydraulically remote 3,000 square feet, with a 500 gallons/min. hose allowance.

1.2.4.2 Fire Service Entry

The fire service entry shall tap into the underground water main, and shall enter the building separately from the domestic water main. The fire service shall enter the building in the boiler room, and shall include a double check backflow preventer, fire department connection, and main drain.

1.2.4.3 Fire Department Connections and Fire Hydrants

Fire Department Connection (FDC) for the sprinkler system(s) shall be provided with suitable all weather access for pumper apparatus. Location of the FDC shall be remote from the facility, near the parking area. The exact location of the FDC shall be dictated by the Base Fire Department. A minimum of one fire hydrant shall be located within 150 Feet of the fire department connection, reference UFC 3-600-01. National Standard Threads (NST) shall be provided for all fire department hose connections.

1.2.4.4 Sprinkler Heads

Provide fully recessed type sprinkler heads (without covers) in all areas with ceilings. Finish shall be bright chrome.

1.2.4.5 Piping

Sprinkler system shall be constructed of ferrous piping as described in NFPA 13. When steel piping is used and joined by welding or rolled grooved pipe and fittings, the minimum nominal wall thickness shall be in accordance with Schedule 10 for sizes up to 5 in. and .134 in. for 6 in.. When steel pipe is joined by threaded fittings or by fittings used with pipe having cut grooves, the minimum wall thickness shall be in accordance

with Schedule 40 for sizes below 8 in. All piping loads shall be coordinated with the structural design.

1.2.4.6 Seismic Construction

Sprinkler piping shall be constructed in accordance with NFPA 13.

1.2.4.7 Hydraulic Design

Sprinkler system shall be hydraulically designed in accordance with NFPA 13.

1.2.4.8 Basis of Design

At time of preparation of the RFP, hydrant flow testing at the project site was not able to be conducted because of ongoing site water main construction projects. A computer simulation of the water system was prepared assuming the following operating conditions:

- One pump at main pump station operating.
- One pump at existing booster station operating.
- Rushmore elevated tank water level at 30 feet.
- Ellsworth elevated tank operating level at 30 feet.
- Current water main project (B-5 project) completed.

Available water system fire flow (at maximum day demand and 20 psi residual pressure) and pressure (at maximum day demand) from computer simulation:

Intersection of Washington Street and Jefferson Street:	64 psi, 3200 gpm
Intersection of Roosevelt Street and Jefferson Street:	65 psi, 2700 gpm
East of new squad ops building along Bergstrom Drive:	87 psi, 3400 gpm

Contractor shall perform hydrant flow testing at the project site to verify actual conditions prior to design of fire protection sprinkler system.

1.2.5 Not Used.

1.2.6 Resistance to Interior Finishes and Materials to Flame Spread and Smoke Development

1.2.6.1 Interior Finishes

Interior finish materials on walls, ceilings, and partitions in all exits shall be Class A as defined in the International Building Code (IBC) and UFC 3-600-01. All other areas shall have Class A or B interior finish materials for walls, ceilings, and furnishings. Smoke Developed ratings shall not exceed 50 for Class A materials and 100 for Class B materials when tested in accordance with ASTM E-84.

1.2.6.2 Cellular Plastics

Cellular Plastics shall not be used as interior wall and ceiling materials per UFC 3-600-01.

1.2.6.3 Floor Finishes

Floor finishes shall be Class I or Class II. Carpet and other floor finishes shall have passed the acceptable criteria of American Society for Testing and Materials (ASTM) Standard 84 or equivalent.

1.2.7 Fire Alarm and Detection System

The fire alarm and detection system shall be monitored by the existing Base system. The entire facility shall have automatic fire alarm system designed in accordance with NFPA 72 and NFPA 101.

Manual pull stations shall be provided and located in accordance with NFPA 101. Supervisory initiating devices shall be provided and designed in accordance with NFPA 13 and 72.

Placement of audio/visual devices shall comply with the Americans with Disabilities Act (ADA), paragraph 4.28 and NFPA 72, Chapter 6. Use the most stringent requirements from ADA or NFPA 72 where conflicts occur.

Outside electric horn for sprinkler system(s) shall also be provided with a visual strobe.

Fire alarm system shall be addressable to each device. Wiring topology shall be capable of communication with each device in the event of a single break in the wiring system. Hybrid systems which have addressable loops are NOT acceptable. All fire alarm system wiring shall be in conduit.

The main building fire alarm panel shall be located in the Main Electrical Room adjacent to the exterior entrance door. The remote annunciator shall be located by the main entrance. Coordinate exact location of panels with the Base Fire Department.

Alarms shall sound/flash local to the facility and also report back to the Base Fire Department via Radio Frequency connection. Contractor shall provide all programming required at the new building and at the Base Fire Department to accommodate the new building's fire detection and alarm system.

Notwithstanding Section 00700 Contract Clauses FAR 52.236-5, Material and Workmanship, the Fire Detection and Alarm System Radio Frequency Transmitter shall be manufactured by Monaco Industries, model BT2-8 in order that compatibility with the existing Ellsworth AFB Fire Detection and Alarm System be maintained. No other product will be acceptable. The Competition Advocate authorizes sole source procurement.

1.2.7.1 NFPA Requirements

Provide control modules, monitor modules, smoke detectors, heat detectors, duct detectors, manual pull stations, OS&Y tamper switches and water flow switches as required by NFPA 13, 72 and 101.

1.2.7.2 Other Requirements

The notification appliances shall be horns with flashing strobes to meet all ADA requirements/recommendations.

The fire alarm system manufacturer shall provide all computer software and computer training required to allow EAFB personnel the ability to make changes to the system, such as adding or deleting devices and making changes to the control sequences.

1.2.7.3 Alarm Verification

The system shall be provided with alarm verification features. The alarm

verification features shall reduce false alarms due to transient conditions. The alarm/activation delay shall be adjustable from 0 to 60 seconds.

1.2.7.4 Indicating Devices

Evacuation indicating signaling devices shall be provided and designed in accordance with NFPA 101. Evacuation alarms shall be activated by a smoke detector, a manual pull station, or a flow switch.

1.2.7.5 System Design

The fire detection system shall be designed IAW the above criteria, with the criteria specified in paragraph SYSTEM DESIGN of UFGS SECTION 13851A, FIRE DETECTION AND ALARM SYSTEM, ADDRESSABLE, and with the criteria specified in SECTION 01007, ELECTRICAL REQUIREMENTS.

1.2.7.6 Shop Drawings and Tests

Submit shop drawings for approval by COE personnel. System tests shall be witnessed by EAFB Fire Department personnel.

1.3 DESIGN OBJECTIVES AND PROVISIONS

1.3.1 Zoning and Treatment of Each Potential Hazard

1.3.1.1 Walls

All areas where a potential hazard exists greater than that of the primary occupancy shall be separated from the primary occupancy by walls having not less than 1-hour fire resistive construction.

1.3.1.2 Limiting Fire Spread

Every horizontal opening, and all hazardous locations as defined by NFPA 101 shall be protected.

1.3.1.3 Fire Alarms and Extinguishing Systems

The facility shall be provided with a fire suppression system and a detection system as indicated previously.

1.3.2 Provision and Maintenance of an Unobstructed Emergency Egress System

All corridor widths, clear space requirements relative to exit doors, etc., shall be in accordance with the Uniform Federal Accessibility Standards (UFAS) and the Americans with Disabilities Act (ADA) for unobstructed egress.

1.3.3 Dead End Corridors

Maximum dead end corridor distance shall be as per NFPA 101, Chapter 38.

1.3.4 Egress Locations

Egress locations shall be marked with exit signs per NFPA 101, Section 7.10. Do not provide exit signs at main exterior exit doors per provision of NFPA 101, Section 7.10.1.2.

1.3.5 Outside Exit Doors

Outside exit doors shall swing in the direction of exit travel. Outside exit doors shall be equipped with panic hardware mounted 44 inches above the finished floor and shall have a minimum clear width of 34 inches to allow for egress.

1.3.6 Required Fire Exits

Required fire exits from the building shall lead to a public way or to a clear safe area at a minimum distance of 75 feet from the building.

PART 2 NOT USED

PART 3 NOT USED

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DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01040

AS-BUILT DRAWINGS

10/02; Rev 01/03

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SECTION 01040

AS-BUILT DRAWINGS
10/02; Rev 01/03

PART 1 GENERAL

1.1 DEFINITIONS

The definitions listed below form a part of this specification.

1.1.1 Red-Line Drawings

Accepted design drawings marked-up to show actual work performed to include necessary sketches, modification drawings, shop drawings and notes. Green ink is used to indicate work deleted from the contract. Red ink is used for additions and deviations from the contract.

1.1.2 As-Built Drawings

Professional finished vellum drawings and electronic CADD files developed from the accepted design drawings that include all of the information from the redline drawings and suitable for half-size reproduction.

1.1.3 Vellum Drawings

Drawings on erasable Vellum 20# similar or equal to Xerox Zero solvent vellum.

1.1.4 Black-Line Drawings

Paper drawings reproduced from electronic CADD files or high quality reproducible drawings.

1.1.5 Full-Size Drawings

28 inches x 40 inches nominal size drawings with all details visually readable.

1.1.6 Half-Size Drawings

14 inches x 20 inches nominal size drawings with all details visually readable.

1.1.7 Modification Circle

A circle with a horizontal line through the center. The top half will contain the letter "P" with the bottom half containing the Modification number. The lettering standard will be 120/6 WRICO or similar.

1.1.8 Not Used

1.1.9 Electronic CADD Files

Electronic CADD files are files saved on CD-ROM in accordance with appropriate CADD standard. The CADD standard will include level on/off status, special characters, line wieghts, font, and size requirements.

1.1.10 Accepted Design Drawings

Construction set of complete design drawings, which have been accepted by the Government, for the construction phase of the contract.

1.2 GENERAL REQUIREMENTS

The work includes creation of vellum drawings and electronic CADD files on AutoCADD 2002 for as-built drawings to accurately depict existing conditions of the project. As-Built Drawings will become the permanent record drawings of the construction. The Contractor is responsible for development of electronic CADD files in accordance with Omaha District CADD standards. **(In the case where the RFP documents furnished to the Contractor follow procedure other than the Omaha District CADD Standards, the Contractor may utilize the format utilized on the RFP Contract Drawings furnished to him after award).** Omaha District AutoCADD Standards will be made available to the successful offeror. AutoCADD Standard utilize the National CAD standards with Omaha District refinements concerning file names, layers, colors, line widths, details and symbols. See requirements in this section for a summary of Omaha District file format and font requirements. The Contractor shall be responsible for furnishing the required CAD software. The As-Built drawings shall include all major features of the work and all details to the same level as the accepted design set of drawings. All changes from the accepted design drawings, including but not limited to all deviations, additional information, and modifications to the contract. Where accepted design drawings or specifications allow for options, only the option selected and actually constructed shall be shown on the As-Built Drawings. Systems designed or enhanced by the Contractor such as HVAC control system, fire alarm system fire sprinkler system, irrigation sprinkler system, letters of clarification, shall be accurately and neatly recorded on the As-Built Drawings using the same symbols, terminology, and general quality as the original set of accepted design drawings. All sheets affected by a change shall be revised. The transmittal requirements for the As-built Drawings shall be shown as events on the Contractor prepared project schedule.

1.3 PAYMENT

In accordance with the clause "Payment Under Fixed - Price Construction Contracts", which provides for progress payments on estimates of work accomplished (which meets the standards of quality established under the contract), \$(number of drawings in accepted design package x \$250 per sheet) will be withheld from payment for the creation of As-Built drawings until the final as-built drawings are delivered to the Contracting Officer (including any necessary revisions and subject to the approval of the Contracting Officer).

1.4 TRANSMITTAL OF AS-BUILT DRAWINGS

1.4.1 Preliminary As-Built Drawings

The Contractor shall produce Preliminary As-Built Drawings indicating as-built conditions on AutoCADD (Version 2002) with "clouding". As-Built preparation process is provided in paragraph As-Built Preparation below. Preliminary drawings shall consist of 15 percent of total project drawings.

These drawings shall be sheets used for the construction of this project (excludes Cover Sheet, Vicinity Map, Location Plan and Indexes). The As-Built CADD files which include all changes up to the time Preliminary Drawings shall be sent as stated below. The Contractor shall draw attention to all drawing changes by "clouding" the affected area. This "clouding" shall be accomplished on layer 63 of the drawing file. The Preliminary Drawings shall consist of one (1) set of CADD files on a CD-ROM and one (1) full-size set of the Black-Line Drawings. One (1) set of CADD files on a CD-ROM shall be submitted to the Omaha District Office (ATTN: CENWO-ED-DI, Jim Janicek). One (1) full-size set of the Black-Line Drawings shall be submitted to the COR. Both documents shall be submitted three (3) weeks prior to the final acceptance inspection unless otherwise directed by the COR. The COR will notify the Contractor in writing of approval / disapproval. The Contractor shall not submit the Final Drawings until he receives the COR's letter approving the Preliminary Drawings.

1.4.2 Final As-Built Drawings

The Contractor shall produce Final As-Built Drawings on AutoCADD (Version 2002) without "clouding". As-Built preparation process is provided in paragraph As-Built Preparation below. The Final Drawings shall include all changes. The Final Drawings in the form of a CD-ROM shall be submitted to the COR and Omaha District Office (CENWO-ED-DI) no earlier than the day of acceptance of the project and no later than thirty (30) days after the date on the acceptance letter for the Preliminary Drawing unless otherwise directed by the COR. (Note: Final drawings shall not be forwarded to the customer. Corps of Engineers, Omaha District COR will forward to the customer after Quality Review.) Contractor shall submit one (1) set of CADD files on a CD-ROM to the Omaha District Office (ATTN: CENWO-ED-DI, Jim Janicek). Contractor shall send the following documents to the COR:

a) One (1) set of CADD files on CD-ROM (folder name containing as-built files shall be designated "AS-BUILTS" on each CD-ROM). Both CD case and CD-ROM shall contain the name of the project, location, specification number, and contract number, and words "As-Built Record Set"). The folder shall contain drawings, indexes and X-REF files related to all as-builts.

b) One (1) full-size set of vellum As-Built Drawings, along with all red-lined hard copy drawings prepared by the Contractor during construction.

COR will forward one (1) full-size set of drawings along with CD-ROM to the customer.

1.4.3 As-Built Preparation

Both preliminary and final electronic as-built drawings shall be produced in accordance with the following process for AutoCADD drawings:

1.4.3.1 Not Used

1.4.3.2 For AutoCADD (*.DWG) Files

- a. When opened, the drawing shall be seen exactly as it should be plotted.
- b. The view shall be zoomed to fit the border.
- c. All information in the title block shall filled in, including plot scale.
- d. The information in the title block shall be correct, including the

design file name and the plot scale.

e. All files shall reference an AutoCAD border supplied by the Omaha District.

f. All unnecessary information outside the border shall be deleted.

g. All files shall be purged.

h. All xrefs shall be included.

i. All fonts used shall be included with the set, even if it is the standard AutoCAD fonts.

j. An ASCII text file shall be provided with the following information:
the name and phone number of the person we need to contact if we have problems, and the version of AutoCAD used to create and/or work on the drawings.

k. Both the .ctb file and the .pc3 file shall be supplied.

l. Each sheet/design shall have its own file and file name.

m. All proxy graphics shall be exploded to allow editing with AutoCAD without the use of Autodesk desktop software.

1.5 PROCEDURE

The Contractor shall create a set of electronic Cadd files and full-size Red-Line Drawings to fully indicate As-Built conditions. The Red-Line Drawings shall be maintained at the site, in a current condition until the completion of the work and shall be available for review by the COR at all times. All as-built conditions shall be on the Red-Line Drawings within two (2) days after the work activity is completed or shall be entered on the deficiency tracking system (see Section 01451A, CONTRACTOR QUALITY CONTROL). The Contractor shall not convert electronic drawing files from one software language to another (i.e. Microstation to AutoCADD or AutoCADD to Microstation).

1.6 TITLE BLOCKS

The contract number and the specification number (if available) shall be shown on all sheets. "RECORD DRAWING" shall be added below the title block on all sheets. All modifications to the contract shall be posted in ascending order. The top line of the revision box shall state "REVISED TO SHOW AS-BUILT CONDITIONS" and dated. All modifications to all plans, sections, or details, shall have a modification number placed in the revision box under column entitled "Symbol". The statement "GENERAL REVISIONS" may be used when applicable. The date to be added in the revision box for modifications is found in Block 3 of Form SF-30. Cover Sheet will have Contract Award Set changed to As-Built Record Set with month & year completed. Month and year completed will also go in the date box in the title block. There will be no separate dates.

1.7 PROCEDURES FOR POSTING MODIFICATION CHANGES TO DRAWINGS

Follow directions in the modification for posting descriptive changes.

A Modification Circle shall be place at the location of each deletion.

The highest modification number on the sheet should be shown in the modification circle in the "DATE" and "DRAWING CODE" boxes of the title block.

For all new details or sections that are added to a drawing, place a Modification Circle by the detail or section title.

For changes to a drawing, place a Modification Circle by the

title of the affected plan, section or detail titles (each location).

For changes to schedules on drawings, a Modification Circle shall be placed either by the schedule heading or by the change in the schedule.

The Modification Circle size shall be 1/2-inch diameter unless the area where circle is to be placed is crowded. Use smaller size circle for crowded areas.

1.8 WORD ABBREVIATIONS

Abbreviations shown on the abbreviation sheet shall be used to describe all work items. Additional word abbreviations, not found on the abbreviation sheet but necessary to describe the work, shall be properly identified and incorporated with the other standard word abbreviations.

1.9 LEGEND SHEETS

Symbols, which conflict with those on the original accepted design legend sheet, shall not be used. Additional symbols, necessary to depict any additional work items, shall be properly identified and added to the legend sheet or supplemental legend. Those projects that do not have legend sheets may use supplemental legends on each sheet where symbol is shown.

1.10 CONTRACTOR SHOP DRAWINGS

Contractor shop drawings, which supersede data on the accepted design plans and/or additional drawings, prepared by the Contractor, shall be incorporated into the As-Built Drawings. Design plans prepared by Contractor shall include the designer's name on the As-Built Drawings.

1.11 INDEXING OF DRAWINGS

If drawings are added to the portfolio of drawings to depict as-built conditions, the index of drawings shall be revised accordingly.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.1 GENERAL

As-Built drawings shall include as-built information to the same level of detail as shown on the original details, unless otherwise specified. The Contractor shall provide any additional full-size drawings as required to display all the details.

3.2 SITE WORK

3.2.1 Utilities

All utilities shall be shown whether active, inactive, shown on the original accepted design drawings, or found on-site. The type of utility, location, general direction, size, material make-up and depth shall be shown. The location and description of any utility line or other installations of any kind known to exist within the construction area shall be shown. The location shall include dimensions to permanent features.

3.2.2 Structures

Structures above and below ground shall be shown. The size, material make-up, location, height, and/or depth shall be shown. Manholes shall show rim elevation and invert elevations as applicable. Power poles shall show electrical equipment and voltage rating.

3.2.3 Grades

Grade or alignment of roads, structures, or utilities shall be corrected if any changes were made from the contract drawings. Elevations shall be corrected if changes were made in site grading.

3.3 STRUCTURAL

3.3.1 Steel

Shop drawings that deviate from the accepted design drawings shall be incorporated in the As-Built Drawings.

3.4 MECHANICAL

3.4.1 Ductwork

Ductwork shall be shown to reflect actual installation and duct size. Ductwork routing changes shall be shown.

3.4.2 Plumbing

Piping and fixtures shall be shown to reflect the type of material, size and the route or location.

3.5 ELECTRICAL

3.5.1 PANELS

All accepted design drawing panel schedules shall be revised to show as-built conditions. Home-run circuit designation on electrical drawings shall accurately correspond to the as-built panel schedules.

3.5.2 Controls

All control diagrams in accepted design drawings shall be revised to reflect as-built conditions, and setpoints.

-- End of Section --

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SECTION 01200

WARRANTY OF CONSTRUCTION AND DESIGN

5/00; Rev 04/03

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SECTION 01200

WARRANTY OF CONSTRUCTION AND DESIGN
5/00; Rev 04/03

PART 1 GENERAL

1.1 WARRANTY OF CONSTRUCTION

(a) Foremost and in addition to any other warranties in this contract, the Contractor warrants, except as provided in paragraph (i) of this clause, that work performed under this contract conforms to the contract requirements and is free of any defect in equipment, material, or workmanship performed by the Contractor or any subcontractor or supplier at any tier.

(b) This warranty shall continue for a period of 1 year from the date of final acceptance of the work. If the Government takes possession of any part of the work before final acceptance, this warranty shall continue for a period of 1 year from the date the Government takes possession.

(c) The Contractor shall remedy at the Contractor's expense any failure to conform, or any defect. In addition, the Contractor shall remedy at the Contractor's expense any damage to Government-owned or controlled real or personal property, when that damage is the result of--

(1) The Contractor's failure to conform to contract requirements;
or

(2) Any defect of equipment, material, workmanship, or design furnished by the Contractor.

(d) The Contractor shall restore any work damaged in fulfilling the terms and conditions of this clause.

(e) The Contractor's warranty with respect to work restored, repaired or replaced will run for 1 year from the date of restoration, repair or replacement. This provision applies equally to all items restored, repaired, or replaced under paragraph (c) and (d) above.

(f) The Government will notify the Contractor, in writing, within a reasonable time after the discovery of any failure, defect, or damage. Repair work necessary to correct a warranty condition which arises to threaten the health or safety of personnel, the physical safety of property or equipment, or which impairs operations, habitability of living spaces, etc., will be performed by the Contractor on an immediate basis as directed verbally by the Government. Written verification will follow verbal instruction.

(g) If the Contractor fails to remedy any failure, defect, or damage within a reasonable time after receipt of verbal or written notice, the Government shall have the right to replace, repair, or otherwise remedy the failure, defect, or damage at the Contractor's expense.

(h) With respect to all warranties, express or implied, from subcontractors, manufacturers, or suppliers for work performed and materials furnished under this contract, the Contractor shall--

(1) Obtain all warranties that would be given in normal commercial practice;

(2) Require all warranties to be executed, in writing, for the benefit of the Government, if directed by the Contracting Officer; and

(3) Enforce all warranties for the benefit of the Government, if directed by the Contracting Officer.

(i) In the event the Contractor's warranty under paragraph (b) of this clause has expired, the Government may bring suit at its expense to enforce a subcontractor's, manufacturer's, or supplier's warranty.

(j) Unless a defect is caused by the negligence of the Contractor or subcontractor or supplier at any tier, the Contractor shall not be liable for the repair of any defects of material or design furnished by the Government nor for the repair of any damage that results from any defect in Government-furnished material or design.

(k) This warranty shall not limit the Government's rights under the Inspection and Acceptance clause of this contract with respect to latent defects, gross mistakes, or fraud.

1.2 ADDITIONAL WARRANTY REQUIREMENTS

1.2.1 Performance Bond

(a) It is understood that the Contractor's Performance Bond will remain effective for one (1) year from the date of acceptance.

(b) If either the Contractor or his representative doesn't diligently pursue warranty work to completion, the contractor and surety will be liable for all costs. The Government, at its option, will either have the work performed by others or require the surety to have it done. Both direct and administrative costs will be reimbursable to the Government.

1.2.2 Pre-Warranty Conference

(a) Prior to contract completion and at a time designated by the Contracting Officer or his authorized representative, the Contractor shall meet with the Contracting Officer or his authorized representative to develop a mutual understanding with respect to the requirements of the Paragraph: WARRANTY OF CONSTRUCTION. Communication procedures for Contractor notification of warranty defects, priorities with respect to the type of defect and other details deemed necessary by the Contracting Officer or his authorized representative for the execution of the construction warranty shall be established/reviewed at this meeting.

(b) In connection with these requirements and at the time of the Contractor's quality control completion inspection, the Contractor will furnish the name, telephone number and address of the service

representative which is authorized to initiate and pursue warranty work action on behalf of the Contractor and surety. This single point of contact will be located within the local service area of the warranted construction, will be continuously available, and will be responsive to Government inquiry on warranty work action and status. This requirement does not relieve the Contractor of any Contractual responsibilities in connection with the paragraph: WARRANTY OF CONSTRUCTION.

(c) Local service area is defined as the area in which the contractor or his representative can meet the response times as described in paragraph 1.2.4 and in any event shall not exceed 200 miles radius of the construction site.

1.2.3 Equipment Warranty Identification

The Contractor shall provide warranty identification tags on all mechanical and electrical equipment installed under this contract. Tags and installation shall be in accordance with the requirements of Paragraph: EQUIPMENT WARRANTY IDENTIFICATION TAGS.

1.2.4 Warranty Service Calls

The Contractor or his local service representative will respond to the site, to a call within the time periods as follows: Four (4) hours for Heating, Air Conditioning, Refrigeration, Air Supply and Distribution, Critical Electrical service Systems and Food Service Equipment and Twenty-Four (24) hours For All Other Systems.

1.2.5 Equipment Warranty Booklet

At or before 30 days prior to final inspection and acceptance of the work, the Contractor shall submit the data mentioned as follows:

The Contractor shall provided a Booklet, which consists of a listing of all equipment items (see paragraphs a. and b. below) which are specified to be guaranteed along with the warranty papers for each piece of equipment. Three (3) legible bound copies of the booklet shall be submitted for approval and shall be indexed alphabetically by equipment type. For each specific guaranteed item, the name, address, and telephone number shall be shown on the list for the subcontractor who installed equipment, equipment supplier or distributor, and equipment manufacturer. Completion date of the guarantee period shall correspond to the applicable specification requirements for each guaranteed item. The names of service representatives that will make warranty calls along with the day, night, weekend and holiday contacts for response to a call within the time period specified shall also be identified.

a. For Equipment in Place: The equipment list shall show unit retail value and nameplate data including model number, size, manufacturer, etc. This would include capital equipment and other nonexpendable supplies of a movable nature that are not affixed as an integral part of the facility and may be removed without destroying or reducing the usefulness of the facility. Some examples are spare parts, special tools, manufacturing equipment, maintenance equipment, instruments, installed under this contract.

b. For Installed Building Equipment: The equipment list shall show unit retail value and nameplate data including model number, size, manufacturer,

etc. This would include items of equipment and furnishings (including material for installation thereof), which are required to make the facility usable and are affixed as a permanent part of the structure. Some examples are plumbing fixtures, laboratory counters and cabinets, kitchen equipment, mechanical equipment, electrical equipment, and fire protection systems installed under this contract.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330SUBMITTAL PROCEDURES:

SD-11 Closeout Submittals

Equipment Warranty Booklet

1.4 EQUIPMENT WARRANTY IDENTIFICATIONS TAGS

1.4.1 GENERAL REQUIREMENTS

The Contractor shall provide warranty identification tags on all Contractor and government furnished equipment which is Contractor installed.

1.4.1.1 Tags and Information

The tags and information shall be similar in format and size to the exhibits provided by this specification, and shall be suitable for interior and exterior locations, resistant to solvents, abrasion, and to fading caused by sunlight, precipitation, etc. These tags shall have a permanent pressure- sensitive adhesive back, and shall be installed in a position that is easily (or most easily) noticeable. If the equipment surface is not suitable for adhesive back, Contractor shall submit his alternative to the Contracting Officer's Authorized Representative for review and approval. Contractor furnished equipment that has differing warranties on its components will have each component tagged.

1.4.1.2 Tags for Warranted Equipment

The tag for his equipment shall be similar to the following:

EQUIPMENT WARRANTY	
CONTRACTOR FURNISHED EQUIPMENT	
MFG-----	MODEL NO.-----
SERIAL NO.-----	
CONTRACT NO.-----	
CONTRACTOR NAME-----	
CONTRACTOR ADDRESS-----	

CONTRACTOR TELEPHONE-----
CONTRACTOR WARRANTY EXPIRES-----
IN CASE OF WARRANTY ACTION FIRST CONTACT
[DEH] [BCE] AT [TELEPHONE NUMBER]

EQUIPMENT WARRANTY	
GOVERNMENT FURNISHED EQUIPMENT	
MFG _____	MODEL NO. _____
SERIAL NO. _____	
CONTRACT NO. _____	
DATE EQUIP PLACED IN SERVICE _____	

1.4.1.3 Exclusion to Providing Tags

If the manufacturer's name (MFG), model number and serial number are on the manufacturer's equipment data plate and this data plate is easily found and fully legible, this information need not be duplicated on the equipment warranty tag. The Contractor's warranty expiration date and the final manufacturer's warranty expiration date will be determined as specified by the Paragraph "WARRANTY OF CONSTRUCTION".

1.4.2 EXECUTION

The Contractor will complete the required information on each tag and install these tags on the equipment by the time of and as a condition of final acceptance of the equipment. The Contractor shall be responsible for scheduling acceptance inspection with the Contracting Officer (verbal and written notification required). If this inspection is delayed by the Contractor, the Contractor shall, at his own expense, update the in-service and warranty expiration dates on these tags.

1.4.3 Equipment Warranty Tag Replacement

Under the terms of this contract, the Contractor's warranty with respect to work repaired or replaced shall run for one year from the date of repair or replacement. Such activity shall include a data warranty identification tag on the repaired or replaced equipment. The tag shall be furnished and installed by the Contractor, and shall be similar to the original tag, except that it should include the scope of repair and that the contractor's warranty expiration date will be one year from the date of acceptance of the repair or replacement. In the case of repair, the repair only will be covered by the extended warranty. In the case of replacement of a component, the component only will be covered by the extended warranty. In these cases, the original tags will not be removed, but an additional tag

will be installed for the repair or component replacement.

1.5 WARRANTY OF DESIGN

(a) Foremost and in addition to any other warranties in this contract, the Contractor warrants that the design shall be performed in accordance with the Contract requirements. Design and design related construction not conforming to the Contract requirements shall be corrected at no additional cost to the Government. The standard of care for design is defined in paragraph (b) of Section 00800 SPECIAL CONTRACT REQUIREMENTS "RESPONSIBILITY OF THE CONTRACTOR FOR DESIGN".

(b) The period of this warranty shall commence upon final completion and the Government's acceptance of the work, or in the case of the Government's beneficial occupancy of all or part of the work for its convenience, prior to final completion and acceptance, at the time of such occupancy.

(c) This design warranty shall be effective from the above event through the Statue of Limitations and Statute of Repose, as applicable to the state that the project is located in.

(d) The rights and remedies of the Government provided for under this clause are in addition to any other rights and remedies provided in this contract or by law.

PART 2 NOT USED

PART 3 NOT USED

-- End of Section --

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SECTION 01320A

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05/02; Omaha Rev. 2/03

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SECTION 01320A

PROJECT SCHEDULE
05/02; Omaha Rev. 2/03

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of the specification to the extent referenced. The publications are referenced in the text by basic designation only.

U.S. ARMY CORPS OF ENGINEERS (USACE)

ER 1-1-11 (1995) Progress, Schedules, and Network
Analysis Systems

1.2 QUALIFICATIONS

The Contractor shall designate an authorized representative who shall be responsible for the preparation of all required project schedule reports.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

Pursuant to the Contract Clause, SCHEDULE FOR CONSTRUCTION CONTRACTS, a Project Schedule as described below shall be prepared. The scheduling of design and construction shall be the responsibility of the Contractor. Contractor management personnel shall actively participate in its development. Designers, subcontractors and suppliers working on the project shall also contribute in developing and maintaining an accurate Project Schedule. The approved Project Schedule shall be used to measure the progress of the work, to aid in evaluating time extensions, and to provide the basis of all progress payments. The scheduler shall be a direct employee of the prime contractor and have a minimum of 2 years experience in scheduling.

3.2 BASIS FOR PAYMENT

The schedule shall be the basis for measuring Contractor progress. Lack of an approved schedule or scheduling personnel will result in an inability of the Contracting Officer to evaluate Contractor's progress for the purposes of payment. Failure of the Contractor to provide all information, as specified below, shall result in the disapproval of the entire Project Schedule submission and the inability of the Contracting Officer to evaluate Contractor progress for payment purposes. In the case where Project Schedule revisions have been directed by the Contracting Officer and those revisions have not been included in the Project Schedule, the Contracting Officer may hold retainage up to the maximum allowed by contract, each payment period, until revisions to the Project Schedule have been made.

3.3 PROJECT SCHEDULE

The computer software system utilized by the Contractor to produce the Project Schedule shall be capable of providing all requirements of this specification. Failure of the Contractor to meet the requirements of this specification shall result in the disapproval of the schedule. Manual methods used to produce any required information shall require approval by the Contracting Officer.

3.3.1 Use of the Critical Path Method

The Critical Path Method (CPM) of network calculation shall be used to generate the Project Schedule. The Contractor shall provide the Project Schedule in the Precedence Diagram Method (PDM).

3.3.2 Level of Detail Required

The Project Schedule shall include an appropriate level of detail. Failure to develop or update the Project Schedule or provide data to the Contracting Officer at the appropriate level of detail, as specified by the Contracting Officer, shall result in the disapproval of the schedule. The Contracting Officer will use, but is not limited to, the following conditions to determine the appropriate level of detail to be used in the Project Schedule:

3.3.2.1 Activity Durations

Contractor submissions shall follow the direction of the Contracting Officer regarding reasonable activity durations. Reasonable durations are those that allow the progress of activities to be accurately determined between payment periods (usually less than 2 percent of all non-procurement activities' Original Durations are greater than 20 days).

3.3.2.2 Design and Permit Activities

Design and permitting activities, including necessary conferences and follow-up actions and design package submission dates, shall be integrated into the schedule.

3.3.2.3 Procurement Activities

Tasks related to the procurement of long lead materials or equipment shall be included as separate activities in the project schedule. Long lead materials and equipment are those materials that have a procurement cycle of over 90 days. Examples of procurement process activities include, but are not limited to: submittals, approvals, procurement, fabrication, and delivery.

3.3.2.4 Critical Activities

The following activities shall be listed as separate line activities on the Contractor's project schedule:

- a. Submission and approval of mechanical/electrical layout drawings.
- b. Submission and approval of O & M manuals.
- c. Submission and approval of as-built drawings.

- d. Submission and approval of 1354 data and installed equipment lists.
- e. Submission and approval of testing and air balance (TAB).
- f. Submission of TAB specialist design review report.
- g. Submission and approval of fire protection specialist.
- h. Submission and approval of testing and balancing of HVAC plus commissioning plans and data.
- i. Air and water balance dates.
- j. HVAC commissioning dates.
- k. Controls testing plan.
- l. Controls testing.
- m. Performance Verification testing.
- n. Other systems testing, if required.
- o. Prefinal inspection.
- p. Correction of punchlist from prefinal inspection.
- q. Final inspection.

3.3.2.5 Government Activities

Government and other agency activities that could impact progress shall be shown. These activities include, but are not limited to: approvals, design reviews, environmental permit approvals by State regulators, inspections, utility tie-in, Government Furnished Equipment (GFE) and Notice to Proceed (NTP) for phasing requirements.

3.3.2.6 Responsibility

All activities shall be identified in the project schedule by the party responsible to perform the work. Responsibility includes, but is not limited to, the subcontracting firm, contractor work force, or government agency performing a given task. Activities shall not belong to more than one responsible party. The responsible party for each activity shall be identified by the Responsibility Code.

3.3.2.7 Work Areas

All activities shall be identified in the project schedule by the work area in which the activity occurs. Activities shall not be allowed to cover more than one work area. The work area of each activity shall be identified by the Work Area Code.

3.3.2.8 Modification or Claim Number

Any activity that is added or changed by contract modification or used to justify claimed time shall be identified by a mod or claim code that changed the activity. Activities shall not belong to more than one

modification or claim item. The modification or claim number of each activity shall be identified by the Mod or Claim Number. Whenever possible, changes shall be added to the schedule by adding new activities. Existing activities shall not normally be changed to reflect modifications.

3.3.2.9 Bid Item

All activities shall be identified in the project schedule by the Bid Item to which the activity belongs. An activity shall not contain work in more than one bid item. The bid item for each appropriate activity shall be identified by the Bid Item Code.

3.3.2.10 Phase of Work

All activities shall be identified in the project schedule by the phases of work in which the activity occurs. Activities shall not contain work in more than one phase of work. The project phase of each activity shall be by the unique Phase of Work Code.

3.3.2.11 Category of Work

All Activities shall be identified in the project schedule according to the category of work which best describes the activity. Category of work refers, but is not limited, to the procurement chain of activities including such items as designs, design package submissions design reviews, review conferences, permits, submittals, approvals, procurement, fabrication, delivery, installation, start-up, and testing. The category of work for each activity shall be identified by the Category of Work Code.

3.3.2.12 Feature of Work

All activities shall be identified in the project schedule according to the feature of work to which the activity belongs. Feature of work refers, but is not limited to, a work breakdown structure for the project. The feature of work for each activity shall be identified by the Feature of Work Code.

3.3.3 Scheduled Project Completion

The schedule interval shall extend from NTP to the contract completion date.

3.3.3.1 Project Start Date

The schedule shall start no earlier than the date on which the NTP was acknowledged. The Contractor shall include as the first activity in the project schedule an activity called "Start Project". The "Start Project" activity shall have an "ES" constraint date equal to the date that the NTP was acknowledged, and a zero day duration.

3.3.3.2 Constraint of Last Activity

Completion of the last activity in the schedule shall be constrained by the contract completion date. Calculation on project updates shall be such that if the early finish of the last activity falls after the contract completion date, then the float calculation shall reflect a negative float on the critical path. The Contractor shall include as the last activity in the project schedule an activity called "End Project". The "End Project" activity shall have an "LF" constraint date equal to the completion date for the project, and a zero day duration.

3.3.3.3 Early Project Completion

In the event the project schedule shows completion of the project prior to the contract completion date, the Contractor shall identify those activities that have been accelerated and/or those activities that are scheduled in parallel to support the Contractor's "early" completion. Contractor shall specifically address each of the activities noted in the narrative report at every project schedule update period to assist the Contracting Officer in evaluating the Contractor's ability to actually complete prior to the contract period.

3.3.4 Interim Completion Dates

Contractually specified interim completion dates shall also be constrained to show negative float if the early finish date of the last activity in that phase falls after the interim completion date.

3.3.4.1 Start Phase

The Contractor shall include as the first activity for a project phase an activity called "Start Phase X" where "X" refers to the phase of work. The "Start Phase X" activity shall have an "ES" constraint date equal to the date on which the NTP was acknowledged, and a zero day duration.

3.3.4.2 End Phase

The Contractor shall include as the last activity in a project phase an activity called "End Phase X" where "X" refers to the phase of work. The "End Phase X" activity shall have an "LF" constraint date equal to the completion date for the project, and a zero day duration.

3.3.4.3 Phase X

The Contractor shall include a hammock type activity for each project phase called "Phase X" where "X" refers to the phase of work. The "Phase X" activity shall be logically tied to the earliest and latest activities in the phase.

3.3.5 Default Progress Data Disallowed

Actual Start and Finish dates shall not be automatically updated by default mechanisms that may be included in CPM scheduling software systems. Actual Start and Finish dates on the CPM schedule shall match those dates provided from Contractor Quality Control Reports. Failure of the Contractor to document the Actual Start and Finish dates on the Daily Quality Control report for every in-progress or completed activity, and failure to ensure that the data contained on the Daily Quality Control reports is the sole basis for schedule updating shall result in the disapproval of the Contractor's schedule and the inability of the Contracting Officer to evaluate Contractor progress for payment purposes. Updating of the percent complete and the remaining duration of any activity shall be independent functions. Program features which calculate one of these parameters from the other shall be disabled.

3.3.6 Out-of-Sequence Progress

Activities that have posted progress without all preceding logic being satisfied (Out-of-Sequence Progress) will be allowed only on a case-by-case approval of the Contracting Officer. The Contractor shall propose logic

corrections to eliminate all out of sequence progress or justify not changing the sequencing for approval prior to submitting an updated project schedule.

3.3.7 Negative Lags

Lag durations contained in the project schedule shall not have a negative value.

3.4 PROJECT SCHEDULE SUBMISSIONS

The Contractor shall provide the submissions as described below. The data disk, reports, and network diagrams required for each submission are contained in paragraph SUBMISSION REQUIREMENTS.

3.4.1 Preliminary Project Schedule Submission

The Preliminary Project Schedule, defining the Contractor's planned operations for the first 60 calendar days shall be submitted for approval within 20 calendar days after the NTP is acknowledged. The approved preliminary schedule shall be used for payment purposes not to exceed 60 calendar days after NTP.

3.4.2 Initial Project Schedule Submission

The Initial Project Schedule shall be submitted for approval within 40 calendar days after NTP. The schedule shall provide a reasonable sequence of activities which represent work through the entire project and shall be at a reasonable level of detail.

3.4.3 Monthly Schedule Updates

Based on the result of progress meetings, specified in "Monthly Progress Meetings," the Contractor shall submit monthly schedule updates. These submissions shall enable the Contracting Officer to assess Contractor's progress. If the Contractor fails or refuses to furnish the information and project schedule data, which in the judgement of the Contracting Officer or authorized representative is necessary for verifying the Contractor's progress, the Contractor shall be deemed not to have provided an estimate upon which progress payment may be made.

3.4.4 Standard Activity Coding Dictionary

The Contractor shall use the activity coding structure defined in the Standard Data Exchange Format (SDEF) in ER 1-1-11, Appendix A. This exact structure is mandatory, even if some fields are not used.

3.5 SUBMISSION REQUIREMENTS

The following items shall be submitted by the Contractor for the preliminary submission, initial submission, and every monthly project schedule update throughout the life of the project:

3.5.1 Data Disks

Two data disks containing the project schedule shall be provided. Data on the disks shall adhere to the SDEF format specified in ER 1-1-11, Appendix A.

3.5.1.1 File Medium

Required data shall be submitted on 3.5 disks, formatted to hold 1.44 MB of data, compatible with Microsoft Windows 95/98 operating systems, unless otherwise approved by the Contracting Officer.

3.5.1.2 Disk Label

A permanent exterior label shall be affixed to each disk submitted. The label shall indicate the type of schedule (Preliminary, Initial, Update, or Change), full contract number, project name, project location, data date, name and telephone number or person responsible for the schedule.

3.5.1.3 File Name

Each file submitted shall have a name related to either the schedule data date, project name, or contract number. The Contractor shall develop a naming convention that will ensure that the names of the files submitted are unique. The Contractor shall submit the file naming convention to the Contracting Officer for approval.

3.5.2 Narrative Report

A Narrative Report shall be provided with the preliminary, initial, and each update of the project schedule. This report shall be provided as the basis of the Contractor's progress payment request. The Narrative Report shall include: a description of activities along the 2 most critical paths, a description of current and anticipated problem areas or delaying factors and their impact, and an explanation of corrective actions taken or required to be taken. The narrative report is expected to relay to the Government, the Contractor's thorough analysis of the schedule output and its plans to compensate for any problems, either current or potential, which are revealed through that analysis.

3.5.3 Approved Changes Verification

Only project schedule changes that have been previously approved by the Contracting Officer shall be included in the schedule submission. The Narrative Report shall specifically reference, on an activity by activity basis, all changes made since the previous period and relate each change to documented, approved schedule changes.

3.5.4 Schedule Reports

The format for each activity for the schedule reports listed below shall contain: Activity Numbers, Activity Description, Original Duration, Remaining Duration, Early Start Date, Early Finish Date, Late Start Date, Late Finish Date, Total Float. Actual Start and Actual Finish Dates shall be printed for those activities in progress or completed.

3.5.4.1 Activity Report

A list of all activities sorted according to activity number.

3.5.4.2 Logic Report

A list of Preceding and Succeeding activities for every activity in ascending order by activity number. Preceding and succeeding activities shall include all information listed above in paragraph Schedule Reports.

A blank line shall be left between each activity grouping.

3.5.4.3 Total Float Report

A list of all incomplete activities sorted in ascending order of total float. Activities which have the same amount of total float shall be listed in ascending order of Early Start Dates. Completed activities shall not be shown on this report.

3.5.4.4 Earnings Report

A compilation of the Contractor's Total Earnings on the project from the NTP until the most recent Monthly Progress Meeting. This report shall reflect the Earnings of specific activities based on the agreements made in the field and approved between the Contractor and Contracting Officer at the most recent Monthly Progress Meeting. Provided that the Contractor has provided a complete schedule update, this report shall serve as the basis of determining Contractor Payment. Activities shall be grouped by bid item and sorted by activity numbers. This report shall: sum all activities in a bid item and provide a bid item percent; and complete and sum all bid items to provide a total project percent complete. The printed report shall contain, for each activity: the Activity Number, Activity Description, Original Budgeted Amount, Total Quantity, Quantity to Date, Percent Complete (based on cost), and Earnings to Date.

3.5.5 Network Diagram

The network diagram shall be required on the initial schedule submission and on monthly schedule update submissions. The network diagram shall depict and display the order and interdependence of activities and the sequence in which the work is to be accomplished. The Contracting Officer will use, but is not limited to, the following conditions to review compliance with this paragraph:

3.5.5.1 Continuous Flow

Diagrams shall show a continuous flow from left to right with no arrows from right to left. The activity number, description, duration, and estimated earned value shall be shown on the diagram.

3.5.5.2 Project Milestone Dates

Dates shall be shown on the diagram for start of project, any contract required interim completion dates, and contract completion dates.

3.5.5.3 Critical Path

The critical path shall be clearly shown.

3.5.5.4 Banding

Activities shall be grouped to assist in the understanding of the activity sequence. Typically, this flow will group activities by category of work, work area and/or responsibility.

3.5.5.5 S-Curves

Earnings curves showing projected early and late earnings and earnings to date.

3.6 PERIODIC PROGRESS MEETINGS

Progress meetings to discuss payment shall include a monthly onsite meeting or other regular intervals mutually agreed to at the preconstruction conference. During this meeting the Contractor shall describe, on an activity by activity basis, all proposed revisions and adjustments to the project schedule required to reflect the current status of the project. The Contracting Officer will approve activity progress, proposed revisions, and adjustments as appropriate.

3.6.1 Meeting Attendance

The Contractor's Project Manager and Scheduler shall attend the regular progress meeting.

3.6.2 Update Submission Following Progress Meeting

A complete update of the project schedule containing all approved progress, revisions, and adjustments, based on the regular progress meeting, shall be submitted not later than 4 working days after the monthly progress meeting.

3.6.3 Progress Meeting Contents

Update information, including Actual Start Dates, Actual Finish Dates, Remaining Durations, and Cost-to-Date shall be subject to the approval of the Contracting Officer. As a minimum, the Contractor shall address the following items on an activity by activity basis during each progress meeting.

3.6.3.1 Start and Finish Dates

The Actual Start and Actual Finish dates for each activity currently in-progress or completed.

3.6.3.2 Time Completion

The estimated Remaining Duration for each activity in-progress. Time-based progress calculations shall be based on Remaining Duration for each activity.

3.6.3.3 Cost Completion

The earnings for each activity started. Payment will be based on earnings for each in-progress or completed activity. Payment for individual activities will not be made for work that contains quality defects. A portion of the overall project amount may be retained based on delays of activities.

3.6.3.4 Logic Changes

All logic changes pertaining to NTP on change orders, change orders to be incorporated into the schedule, contractor proposed changes in work sequence, corrections to schedule logic for out-of-sequence progress, lag durations, and other changes that have been made pursuant to contract provisions shall be specifically identified and discussed.

3.6.3.5 Other Changes

Other changes required due to delays in completion of any activity or group of activities include: 1) delays beyond the Contractor's control, such as strikes and unusual weather. 2) delays encountered due to submittals, Government Activities, deliveries or work stoppages which make re-planning the work necessary. 3) Changes required to correct a schedule which does not represent the actual or planned prosecution and progress of the work.

3.7 REQUESTS FOR TIME EXTENSIONS

In the event the Contractor requests an extension of the contract completion date, or any interim milestone date, the Contractor shall furnish the following for a determination as to whether or not the Contractor is entitled to an extension of time under the provisions of the contract: justification, project schedule data, and supporting evidence as the Contracting Officer may deem necessary. Submission of proof of delay, based on revised activity logic, duration, and costs (updated to the specific date that the delay occurred) is obligatory to any approvals.

3.7.1 Justification of Delay

The project schedule shall clearly display that the Contractor has used, in full, all the float time available for the work involved with this request.

The Contracting Officer's determination as to the number of allowable days of contract extension shall be based upon the project schedule updates in effect for the time period in question, and other factual information. Actual delays that are found to be caused by the Contractor's own actions, which result in the extension of the schedule, will not be a cause for a time extension to the contract completion date.

3.7.2 Submission Requirements

The Contractor shall submit a justification for each request for a change in the contract completion date of under 2 weeks based upon the most recent schedule update at the time of the NTP or constructive direction issued for the change. Such a request shall be in accordance with the requirements of other appropriate Contract Clauses and shall include, as a minimum:

- a. A list of affected activities, with their associated project schedule activity number.
- b. A brief explanation of the causes of the change.
- c. An analysis of the overall impact of the changes proposed.
- d. A sub-network of the affected area.

Activities impacted in each justification for change shall be identified by a unique activity code contained in the required data file.

3.7.3 Additional Submission Requirements

For any requested time extension of over 2 weeks, the Contracting Officer may request an interim update with revised activities for a specific change request. The Contractor shall provide this disk within 4 days of the Contracting Officer's request.

3.8 DIRECTED CHANGES

If the NTP is issued for changes prior to settlement of price and/or time,

the Contractor shall submit proposed schedule revisions to the Contracting Officer within 2 weeks of the NTP being issued. The proposed revisions to the schedule will be approved by the Contracting Officer prior to inclusion of those changes within the project schedule. If the Contractor fails to submit the proposed revisions, the Contracting Officer may furnish the Contractor with suggested revisions to the project schedule. The Contractor shall include these revisions in the project schedule until revisions are submitted, and final changes and impacts have been negotiated. If the Contractor has any objections to the revisions furnished by the Contracting Officer, the Contractor shall advise the Contracting Officer within 2 weeks of receipt of the revisions. Regardless of the objections, the Contractor shall continue to update the schedule with the Contracting Officer's revisions until a mutual agreement in the revisions is reached. If the Contractor fails to submit alternative revisions within 2 weeks of receipt of the Contracting Officer's proposed revisions, the Contractor will be deemed to have concurred with the Contracting Officer's proposed revisions. The proposed revisions will then be the basis for an equitable adjustment for performance of the work.

3.9 OWNERSHIP OF FLOAT

Float available in the schedule, at any time, shall not be considered for the exclusive use of either the Government or the Contractor.

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SECTION 01330

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SECTION 01330

SUBMITTAL PROCEDURES
09/01; Omaha Update 02/03

PART 1 GENERAL

Attachments: Submittal Register
ENG Form 4025, Transmittal Form

1.1 SUMMARY

This section includes administrative and procedural requirements for construction submittals presented by the Contractor after 100% corrected plans and specifications have been accepted by the government. This section also includes requirements for developing, submitting and maintaining a "Submittal Register".

1.2 CONTRACTOR RESPONSIBILITIES

The Contractor is responsible for total management of his work including approval, scheduling, control, and certification of all submittals. The submittal management system provided in these specifications is intended to be a complete system for the Contractor to use to control the quality of materials, equipment and workmanship provided by manufacturers, fabricators, suppliers and subcontractors. The Contractor shall review each submittal for contract compliance. The Submittal Register (ENG Form 4288) will be utilized to log and monitor all submittal activities. No construction or installation activities shall be performed prior to required approvals and Government compliance reviews of applicable submittals. The Contractor shall perform a check to assure that all materials and/or equipment have been tested, submitted and approved during the preparatory phase of quality control inspections. The Contractor shall coordinate all submittals with the Contractor's Designer (A-E). Approval by the Contractor's Designer means that the submittal is in compliance with the Construction Set design submittal.

1.3 SUBMITTAL IDENTIFICATION (SD)

Submittals required are identified by SD numbers and titles as follows:

SD-01 Preconstruction Submittals

Tabular lists showing location, features, or other pertinent information regarding products, materials, equipment, or components to be used in the work.

In addition, the following items are included:

Work plan
Quality control plan
Permits

SD-02 Shop Drawings

Submittals which graphically show relationship of various components of the work, schematic diagrams of systems, details of fabrication, layouts of particular elements, connections, and other relational aspects of the work.

SD-03 Product Data

Catalog cuts, illustrations, schedules, diagrams, performance charts, instructions and brochures illustrating size, physical appearance and other characteristics of materials or equipment for some portion of the work.

Samples of warranty language when the contract requires extended product warranties.

SD-04 Samples

Samples, including both fabricated and unfabricated physical examples of materials, products, and units of work as complete units or as portions of units of work.

Physical examples of materials, equipment or workmanship that illustrate functional and aesthetic characteristics of a material or product and establish standards by which the work can be judged. Color samples from the manufacturer's standard line (or custom color samples if specified) to be used in selecting or approving colors for the project.

Field samples and mock-ups constructed on the project site establish standards by which the ensuring work can be judged. Includes assemblies or portions of assemblies which are to be incorporated into the project and those which will be removed at conclusion of the work.

SD-05 Design Data

Calculations, mix designs, analyses or other data pertaining to a part of work.

SD-06 Test Reports

Report signed by authorized official of testing laboratory that a material, product or system identical to the material, product or system to be provided has been tested in accordance with specified requirements. (Testing must have been within three years of date of contract award for the project.)

Report which includes findings of a test required to be performed by the contractor on an actual portion of the work or prototype prepared for the project before shipment to job site.

Report which includes finding of a test made at the job site or on sample taken from the job site, on portion of work during or after installation.

Investigation reports

Daily checklists

Final acceptance test and operational test procedure

SD-07 Certificates

A document, required of the Contractor, or through the Contractor, from a supplier, installer, manufacturer, or other lower tier Contractor, the purpose of which is to confirm the quality or orderly progression of a portion of the work by documenting procedures, acceptability of methods or personnel, qualifications, or other verifications of quality.

Statement signed by an official authorized to certify on behalf of the manufacturer of a product, system or material, attesting that the product, system or material meets specified requirements. The statement must be dated after the award of the contract, must state the Contractor's name and address, must name the project and location, and must list the specific requirements which are being certified.

Confined space entry permits.

SD-08 Manufacturer's Instructions

Preprinted material describing installation of a product, system or material, including special notices and material safety data sheets, if any, concerning impedances, hazards, and safety precautions.

SD-09 Manufacturer's Field Reports

Documentation of the testing and verification actions taken by manufacturer's representative to confirm compliance with manufacturer's standards or instructions.

Factory test reports.

SD-10 Operation and Maintenance Data

Data intended to be incorporated in operations and maintenance manuals.

SD-11 Closeout Submittals

Documentation to record compliance with technical or administrative requirements or to establish an administrative mechanism.

In addition, the following items are included:

As-built drawings

Special warranties

Posted operating instructions

Training plan

1.4 SUBMITTAL CLASSIFICATION

Submittals are classified as follows:

1.4.1 Designer Approved ("G-AE")

Designer approval is required for extensions of design, critical materials, deviations, any deviations from the solicitation, the accepted proposal, or the completed design, equipment whose compatibility with the entire system must be checked, and other items as designated by the Contracting Officer. Within the terms of the Contract Clause entitled

"Specifications and Drawings for Construction," they are considered to be "shop drawings." All submittals noted in the technical specifications and Submittal Register as "G-AE" are subject to approval by the Contractor's Designer, prior to submittal to the Government. The Contracting Officer has the option to review any submittal. The Government will review all "G-AE" submittals for conformance to the solicitation and all submittals designated as variations from the Solicitation or 100% corrected design or as directed by the Contracting Officer.

1.4.2 Government Reviewed Construction Submittals ("G-AO")

"G-AO" submittals subject to Government review are those so designated by the Contracting Officer during the design process or preconstruction meeting. All "G-AO" submittals shall be reviewed and approved by the Contractor's Quality Control Representative and the Contractor's Designer prior to submittal to the Government. Within the terms of the Contract Clause entitled "Specification and Drawings for Construction," they are considered to be "shop drawings." Any variance must clearly identify the variance as specified in paragraph: "Variations", below.

Government review is required for designated "G-AO" submittals and variations from the the solicitation requirements and completed design. Review will be only for conformance with the contract requirements. This also includes those construction submittals for which the design documents did not include enough detail to ascertain contract compliance. Government review will not include development of design calculations or other means of determining adequacy of design. The Contractor and his designer retains the sole responsibility for adequacy of design.

1.4.3 Information Only (FIO)

All "FIO" submittals shall be reviewed and approved by the Contractor's Quality Control Representative and the Contractor's Designer prior to submittal to the Government. They are not considered to be "shop drawings" within the terms of the Contract Clause referred to above. The Contracting Officer has the option to review any submittal.

1.4.4 Administrative Submittals

The submittal items listed below are not be included on the Submittal Register (as discussed below). Unless directed otherwise by the Contracting Officer, the following administrative submittals shall be submitted to the Area or Resident (as directed) Office, for approval, via a Serial Letter: Quality Control Plans (Section 01451A CONTRACTOR QUALITY CONTROL), Accident Prevention Plans (Section 01400 SPECIAL SAFETY REQUIREMENTS, Revisions to Environmental Protection Plans (Section 01355 ENVIRONMENTAL PROTECTION) and other submittals as directed by the Contracting Officer. Format for the Serial Letter shall be as directed by the Area or Resident Office.

1.5 GOVERNMENT REVIEWED SUBMITTALS

The Contracting Officer's review of submittals shall not be construed as a complete check, but will indicate only that the general method of construction, materials, detailing and other information appear to meet the Solicitation requirements. Government Review will not relieve the Contractor of the responsibility for any error which may exist, as the Contractor under the Design and CQC requirements of this contract is responsible for design, compliance with design criteria required in the

solicitation, dimensions, all design extensions, such as the design of adequate connections and details, etc. and the satisfactory construction of all work. After submittals have been reviewed for conformance or approval, as applicable, by the Contracting Officer, no resubmittal for the purpose of substituting materials or equipment will be considered unless accompanied by an explanation of why a substitution is necessary.

1.6 DISAPPROVED SUBMITTALS

The Contractor shall make all corrections required by the Contracting Officer, obtain the Contractor's Designer approval and Government review, or approval, when applicable, and promptly furnish a corrected submittal in the form and number of copies specified for the initial submittal. Any submittal found to contain errors or unapproved variations from the solicitation or accepted proposal, shall be resubmitted as one requiring "approval" action, requiring both Designer's approval and Government conformance review or approval, as applicable. If the Contractor considers any correction indicated on the submittals to constitute a change to the contract, a notice in accordance with the Contract Clause "Changes" shall be given promptly to the Contracting Officer.

1.7 WITHHOLDING OF PAYMENT

No Payment for materials incorporated in the work will be made if all required Designer or Contractor Quality Control Representative approvals or required Government conformance reviews, or approvals, as applicable, have not been obtained. No payment will be made for any materials incorporated in the work for any conformance review submittals or information only submittals found to contain errors or deviations from the Solicitation or Accepted Proposal.

1.8 GENERAL

The Contractor shall make submittals as required by the specifications. The Contracting Officer may request submittals in addition to those specified when deemed necessary to adequately describe the work covered in the respective sections. Units of weights and measures used on all submittals shall be the same as those used in the contract drawings. Each submittal shall be complete and in sufficient detail to allow ready determination of compliance with contract requirements. The Contractor's Quality Control (CQC) representative, and the Designer, as applicable, shall check, approve and stamp, sign, and date each item, indicating action taken. Proposed variations from the solicitation (contract requirements) or accepted 100% corrected design shall be clearly identified. Submittals shall include items such as: Contractor's, manufacturer's, or fabricator's drawings; descriptive literature including (but not limited to) catalog cuts, diagrams, operating charts or curves; test reports; test cylinders; samples; O&M manuals (including parts list); certifications; warranties; and other such required submittals. Submittals requiring conformance review or approval by the Government shall be scheduled and made prior to the acquisition of the material or equipment covered thereby. Samples remaining upon completion of the work shall be picked up and disposed of in accordance with manufacturer's Material Safety Data Sheets (MSDS) and in compliance with existing laws and regulations.

1.9 SUBMITTAL REGISTER AND ENG FORM 4288 (RMS) SUBMITTAL REGISTER

The Contractor's Designer(s) shall develop a complete list of submittals during design. The Designer shall identify required submittals in the

specifications. The list is to be used in preparing Submittal Register as approved by the Contracting Officer Representative. The example Submittal Register furnished with the Solicitation was created using Specsintact Software. The Contractor shall replace this example Submittal Register with the actual submittal register for the completed design specifications. The list is not all inclusive and additional submittals may be required. The attached and Contractor generated submittal register identifies only the submittal section, type of submittal, description of item submitted, paragraph number related to submittal item (section submittal paragraph if none listed), submittal classification (G), and submittal reviewer identifier (AE or AO). Any submittal without a submittal classification and submittal reviewer identifier is considered to be For Information Only (FIO). The submittal register generated by the Government Resident Management System (RMS) Software is used for tracking construction submittals and is referred to as ENG Form 4288 (RMS). Much of the same information contained on the Contractor generated submittal register will be included on the ENG Forms 4288 (RMS). The Contractor shall maintain a ENG Form 4288 (RMS) for the project in accordance with the attached ENG Form 4288 (RMS) Instructions. The Contractor will be furnished one (1) set of ENG Forms 4288 (RMS) at the preconstruction conference on which will be listed each item of equipment and material of each type for which fabricators' drawings, and/or related descriptive data, test reports, samples, spare parts lists, O&M manuals, or other types of submittals are required by the completed project specifications. The Contractor shall complete the appropriate columns as indicated on the attached ENG Form 4288 (RMS) Instructions and return six (6) completed copies to the Contracting Officer for acceptance within 20 calendar days after the preconstruction conference. Upon acceptance of the ENG Form 4288 (RMS) by the Contracting Officer, the ENG Form 4288 (RMS) will serve as a scheduling document for submittals and will be used to control submittal actions throughout the contract period. The ENG Form 4288 (RMS) ACTIVITY NO. is filled in when a network analysis system is a contract requirement. The TRANSMITTAL NO. and ITEM NO. shall be left blank and used later to record the respective transmittal and item number corresponding to those listed on the transmittal form entitled: "TRANSMITTAL OF SHOP DRAWINGS, EQUIPMENT DATA, MATERIAL SAMPLES, OR MANUFACTURER'S CERTIFICATES OF COMPLIANCE" (ENG Form 4025). The approved ENG Form 4288 (RMS) will become the scheduling document and will be used to control submittals throughout the life of the contract. The submittal register and the progress schedules shall be coordinated. Updates to the submittal register showing the Contractor action codes and actual dates shall be submitted monthly or until all submittals have been satisfactorily completed. When the progress schedule is revised, the ENG Form 4288 (RMS) shall also be revised and both submitted for approval.

1.10 SCHEDULING

Submittals covering component items forming a system or items that are interrelated shall be scheduled to be coordinated and submitted concurrently. Certifications to be submitted with the pertinent drawings shall be so scheduled. Adequate time (a minimum of 20 calendar days exclusive of mailing time) shall be allowed and shown on the register for conformance reviews by the Contracting Officer for submittals requiring Government review and for submittals which vary from the solicitation or accepted 100% corrected design. No delay damages or time extensions will be allowed for time lost in late submittals.

1.11 TRANSMITTAL FORM (ENG FORM 4025)

The sample transmittal form (ENG Form 4025) attached to this section shall be used for submitting all submittals in accordance with the instructions on the reverse side of the form. These forms will be furnished to the Contractor. This form shall be properly completed by filling out all the heading blank spaces and identifying each item submitted. Special care shall be exercised to ensure proper listing of the specification paragraph and/or sheet number of the contract drawings pertinent to the data submitted for each item.

1.12 SUBMITTAL PROCEDURES

Submittals shall be made as follows:

1.12.1 Procedures

1.12.1.1 "G-AE" Submittals

All "G-AE" submittals shall be reviewed and approved by the Contractor's Quality Control Representative and Contractor's Designer prior to submittal to the Government. A conformance review is required by the Government on all "G-AE" submittals, prior to construction of the related items.

Except as noted below, data for all items listed as "G-AE" Submittals in the various sections shall be submitted in seven (7) copies). All seven (7) copies shall be submitted to the Area Engineer using the transmittal form. Items not to be submitted in multiples, such as samples and test cylinders, shall be submitted to the Area or Resident Engineer (as directed), accompanied by seven (7) copies of the transmittal form.

Each required submittal, which is in the form of a drawing, shall be submitted as seven (7) prints of the drawing. Drawing prints shall be either blue or black line permanent-type prints on a white background or blueprint and shall be sufficiently clear and suitable for making legible copies.

Catalog cuts and other descriptive data which have more than one model, size, or type or which shows optional equipment shall be clearly marked to show the model, size, or type and all optional equipment which is provided.

Submittals on component items forming a system or that are interrelated shall be submitted at one time as a single submittal in order to demonstrate that the items have been properly coordinated and will function as a unit.

An additional copy of reviewed and approved submittals related to fire protection/detection systems shall be submitted to the Base Civil Engineering Office. The mailing address for these submittals shall be obtained at the preconstruction conference.

1.12.1.2 "G-AO" and FIO Submittals

Except as noted below, data for all items listed as "G-AO" Submittals in the various sections shall be submitted in five (5) copies. All five copies shall be submitted to the Area Engineer for solicitation conformance review using the transmittal form. Items not to be submitted in multiples, such as samples and test cylinders, shall be submitted to the Area or Resident Engineer (as directed) accompanied by five (5) copies of the transmittal form.

Except as noted below, data for all items listed as "FIO" Submittals in the

various sections shall be submitted in three (3) copies. All three copies shall be submitted to the Area Engineer using the transmittal form. Items not to be submitted in multiples, such as samples and test cylinders, shall be submitted to the Area or Resident Engineer (as directed) accompanied by three (3) copies of the transmittal form.

All "G-AO" and "FIO" submittals shall be reviewed and approved by the Contractor's Quality Control Representative and Contractor's Designer prior to submittal to the Government. A completed Government conformance review is required on all "G-AO" submittals, prior to construction of the related items.

The Government has the option to review any For Information Only submittals.

1.12.1.3 Certificates of Compliance

Each certificate shall be signed by an official authorized to certify in behalf of the manufacturing company and shall contain the name and address of the Contractor, the project name and location, and the quantity and date or dates of shipment or delivery to which the certificates apply. Copies of laboratory test reports submitted with certificates shall contain the name and address of the testing laboratory and the date or dates of the tests to which the report applies. Certification shall not be construed as relieving the Contractor from furnishing satisfactory material, if, after tests are performed on selected samples, the material is found not to meet the specific requirements.

1.12.1.4 Purchase Orders

Copies of purchase orders shall be furnished to the Contracting Officer when the Contractor requests assistance for expediting deliveries of equipment or materials, or when requested by the Contracting Officer for the purpose of quality assurance review. Each purchase order issued by the Contractor or his subcontractors for materials and equipment to be incorporated into the project shall (1) be clearly identified with the applicable DA contract number, (2) carry an identifying number, (3) be in sufficient detail to identify the material being purchased, (4) indicate a definite delivery date, and (5) display the DMS priority rating, if applicable.

1.12.1.5 Operation and Maintenance Instructions and/or Manuals

Where required by various technical sections, operations and maintenance instructions and/or manuals with parts lists included shall be provided by the Contractor in quintuplicate, unless otherwise specified, and shall be assembled in three-ring binders with index and tabbed section divider and having a cover indicating the contents by equipment or system name and project title and shall be submitted to the Area Engineer for approval (after approval by the Contractor's Quality Control Representative), 90 days prior to final tests of mechanical and electrical systems, unless otherwise specified. Each operation and maintenance manual shall contain a copy of all warranties. If field testing requires these copies to be revised, they shall be updated and resubmitted for review within 10 calendar days after completion of tests. The Operations and Maintenance Instructions and/or Manuals shall be shown as a separate activity on the Contractor prepared construction schedule bar chart or network analysis system.

1.12.1.6 Interior/Exterior Finish Sample and Data

All submittals regarding color boards (Section 09915 COLOR SCHEDULE) for interior finish samples and data shall be submitted concurrently and all submittals for exterior finish samples and data shall be submitted concurrently. These color boards are in addition to the samples required under the specific technical specifications listed as "samples".

1.12.2 Variations

Variations from the solicitation (contract requirements) or the accepted 100% corrected design must be approved by the Contractor's Designer, Contractor's Quality Control Representative and Contracting Officer. For submittals which include proposed variations, the column "variation" of ENG Form 4025 shall be checked and a serial letter shall be simultaneously prepared and sent to the Area Engineer referencing this variation. The Contractor shall set forth in writing the reason for any variations and clearly annotate such variations on the submittal. The narrative shall include documentation of the nature and features of the variation and why the variation is desirable and beneficial to the Government. When submitting a variation for acceptance, the Contractor warrants that the contract has been reviewed to establish that the variation, if incorporated, will be compatible with other elements of the work. The Contractor shall take actions and bear the additional costs, including review costs by the Government, necessary due to the proposed variation. In addition to the submittal review period specified above, allow ten (10) additional working days for consideration by the Government of submittals with variations. The Government reserves the right to rescind inadvertent action codes of submittals containing unnoted variations.

1.13 CONTROL OF SUBMITTALS

The Contractor shall carefully control his procurement operations to ensure that each individual submittal is made on or before the Contractor scheduled submittal date shown on the approved "Submittal Register."

1.14 SUBMITTALS (FINAL COPY)

Upon completion of review of submittals requiring Government conformance review or approval, the submittals will be identified as having received satisfactory review by being so stamped and dated.

1.14.1 "G-AE" Submittals

The Contracting Officer has the option to review any submittal. Two (2) copies of "G-AE" submittals, for conformance review by the Government, will be returned to the Contractor, except for samples, test cylinders, and O&M manuals for which two (2) copies of the transmittal form only will be returned to the Contractor. The Government reserves the right to require the Contractor to resubmit any item found not to comply with the contract. All "G-AE" submittals shall be reviewed and approved by the Contractor's Designer and Contractor's Quality Control Representative prior to submittal to the Government.

1.14.2 "G-AO" Submittals

Two (2) copies of "G-AO" submittals for conformance review will be returned to the Contractor except for samples, test cylinders, and O&M manuals for which two (2) copies of the transmittal form only will be returned to the Contractor.

1.15 INFORMATION ONLY SUBMITTALS

Normally submittals for information only will not be returned. Approval of the Contracting Officer is not required on information only submittals. The Government reserves the right to require the Contractor to resubmit any item found not to comply with the contract. This does not relieve the Contractor from the obligation to furnish material conforming to the plans and specifications; will not prevent the Contracting Officer from requiring removal and replacement of nonconforming material incorporated in the work; and does not relieve the Contractor of the requirement to furnish samples for testing by the Government laboratory or for check testing by the Government in those instances where the technical specifications so prescribe.

1.16 STAMPS

Stamps used by the Contractor's Designer and the Contractor's designated Quality Control person on the submittal data to certify that the submittal meets contract requirements shall be similar to the following (use two stamps for submittals reviewed by both):

CONTRACTOR	
(Firm Name)	
_____	Approved
_____	Approved with corrections as noted on submittal data and/or attached sheets(s).
SIGNATURE: _____	
TITLE: _____	
DATE: _____	

INSTRUCTIONS
ENG FORM 4288 (RMS)

1. The Contractor shall utilize the ENG Form 4288 (RMS) generated by the Government Residential Management System (RMS) software for tracking construction submittals. The Submittal Register information, columns (c) thru (f) from the Contractor generated Submittal Register, will be utilized by the Government to generate the ENG Form 4288 (RMS). The Government will furnish the Contractor a hard copy of the ENG Form 4288 (RMS) at the preconstruction conference. The ENG Form 4288 (RMS) includes the following items and parties responsible for completing the information required on the ENG Form 4288 (RMS). The subparagraph headings below do not correspond to the Submittal Register column headings.

a. Activity Number: will be provided by the Contractor from his Network Analysis, if required, and when a network analysis is accepted.

b. Transmittal Number and Item Number: will be provided by the Contractor from ENG Form 4025 for each item.

c. Specification Paragraph Number: will be provided by the Contractor from the Submittal Register from column entitled "Specification Paragraph Number".

d. Description of Submittal: will be provided by the Contractor from the Submittal Register from column entitled "Description of Item Submitted".

e. Type of Submittal: will be provided by the Contractor from the Submittal Register from column entitled "Type of Submittal" or "Description of Item Submitted".

f. Classification: will be provided by the Contractor from the Submittal Register from column entitled "Classification".

g. Reviewing Office - Reviewer: will be provided by the Contractor from the Submittal Register from column entitled "Classification" or "Reviewer".

h. Contractor Schedule Dates: the Contractor will provide schedule dates for

"Submit Needed By" (Date the Contractor expects to submit an item. It is the Contractors responsibility to calculate the lead time needed for the government approval. Note if resubmittal is required it is the Contractors responsibility to make all adjustments necessary to meet the contract completion date.)

"Approval Needed By" (date the Contractor can receive approval and still obtain the material by need date.), and

"Material Needed By" (date that the material is needed at the site. If there is a network analysis it should reflect that date on the analysis.)

i. Contractor Action: Includes the following items: "Code" and "Submit to the Corps". These items will be completed by the Contractor and/or Contractor's Designer. The action codes will be one of the following:

A - Approved as submitted.

- B - Approved, except as noted.
- G - Other (specify)

j. Government Action: This item includes a Government Action "Code" and "Date" and is reserved for Government use. The Government reserves the right to review any submittal for contract compliance. Receipt of an Action Code "F - Receipt Acknowledged" or failure of the Contractor to receive an Action Code by the Government, does not mean that the submittal is in compliance with the contract requirements. For this design-build solicitation, unless noted otherwise by the Contracting Officer, the Action Codes for this form, when used by the Government, will be one of the following:

- A - Reviewed for conformance. No except taken
- B - Reviewed for conformance. Exceptions as noted.
- C - Reviewed for conformance. Exceptions as noted. Refer to attached
_____ sheet resubmission required.
- D - Will be returned by separate correspondence.
- E - Reviewed. Does not comply (See Attached). Resubmission required.
- F - Receipt Acknowledged.
- Fx - Receipt acknowledged, does not comply as noted with contract requirements.
- G - Other (specify).

2. Reviewer Abbreviation code will be as follows;

G-AE - Approved by Contractor's Designer, Contractor's Quality Control Representative and Conformance Review by the Government, as applicable. Approval by the Contractor's Designer means that the submittal complies with Construction Set design submittal.

G-AO - Approved by Contractor's Quality Control Representative and Designer and conformance review by the Government.

For Information Only - All other submittals without a G-AO or G-AE abbreviation code, Approved by Contractors Quality Control Representative and/or Designer. The Government reserves the right review any submittal for conformance with the solicitation.

INSTRUCTIONS
ENG FORM 4025

1. DATE at the top of form will be the date submitted to the DOR which is to be completed by the Contractor.
2. TRANSMITTAL NO. Each new transmittal (i.e. G-AE, G-AO or FIO) shall be numbered consecutively for each specification section in the space provided in "Transmittal No.". This number will be the identifying symbol for each submittal. Example: "15400A-001", "15895A-001" "15895A-002", "16415A-001", etc. For each new submittal or for a resubmittal, the appropriate box must be marked. Resubmittals must be designated by their original sequential number followed by an ".1", ".2", etc. for each sequential resubmittal. Example: "15895A-001.1" (previous submittal No. 15895A-001).
3. TO: Box will contain the name and address of the office which will review the submittal (as designated by the Contracting Officer).
4. FROM: Box will be the name and address of the Contractor. Contractor is to complete this box.
5. CONTRACT NO. box will contain the Contractors construction contract number (e.g., DACXXX-XX-C-XXXX).
6. CHECK ONE box
 - a. CHECK ONE box (for transmittal/ retransmittal) will be completed by the Contractor with one box marked. If a resubmittal is provided last transmittal number will be added.
 - b. CHECK ONE box will be completed by the Contractor with one box marked for the submittal type.
7. SPECIFICATION SECTION NO. box will be completed by the Contractor. The number will be the five digit number found in the specifications. No more than one section will be covered with each transmittal.
8. PROJECT TITLE AND LOCATION box will be completed by the Contractor.
9. Column a, will be completed by the Contractor and will contain a different number for each item submitted in that transmittal. Once a number is assigned to an item it will remain the same even if there is a resubmittal.
10. Column b, will be completed by the Contractor. The description of each item on this form will be the descriptions provided on the submittal register. The Contractor shall submit each submittal register item all at once on one transmittal if possible. If a submittal register item can not be submitted all at once Contractor should note that in the remarks box.
11. Column c, will be completed by the Contractor. The information will be the appropriate submittal description number as described this Section or shown on the submittal register (e.g. SD-XX).
12. Column d, will be completed by the Contractor. The number of copies will be determined by the Contractor after review of submittal register for the classification of the item and after review of paragraph: SUBMITTAL PROCEDURES of this Section.

13. Column e, will be completed by the Contractor. The Contractor shall state all applicable paragraph numbers.

14. Column f, will be completed by the Contractor. The Contractor shall state all applicable drawing sheet numbers.

15. Column g, will be completed by the Contractor and/or Contractor's Designer. The action codes will be one of the following:

- A - Approved as submitted.
- B - Approved, except as noted.
- G - Other (specify)

16. Column h, will be completely by the Contractor. A check shall be placed in this column when a submittal is not in accordance with the plans and specifications also, a written statement to that effect shall be included in the space provided for "Remarks".

17. Column i, is reserved for Government use and may or may not be provided. For this design-build solicitation, unless noted otherwise by the Contracting Officer, the Action Codes for this form, when used by the Government, will be one of the following:

- A - Reviewed for conformance. No except taken.
- B - Reviewed for conformance. Exceptions as noted.
- C - Reviewed for conformance. Exceptions as noted. Refer to attached
_____ sheet resubmission required.
- D - Will be returned by separate correspondence.
- E - Reviewed. Does not comply (See Attached). Resubmission required.
- F - Receipt Acknowledged.
- Fx - Receipt acknowledged, does not comply as noted with contract requirements.
- G - Other (specify).

18. REMARKS box self explained.

19. Contractor Quality Control Manager must provide name and sign all Eng Form 4025 certifying conformance. In the space for the name and signature, also include a phone number where the CQC Manager may be reached.

20. Section II will be completed by the Contractor, unless approval is required by the Government.

See reverse side of ENG Form 4025 for additional instructions.

-- End of Section --

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SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION

37th B-1B Squadron Operations Fac, Ellsworth AFB, South Dakota

CONTRACTOR

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INSTRUCTIONS

1. Section I will be initiated by the Contractor in the required number of copies.
2. Each transmittal shall be numbered consecutively in the space provided for "Transmittal No.". This number, in addition to the contract number, will form a serial number for identifying each submittal. For new submittals or resubmittals mark the appropriate box; on resubmittals, insert transmittal number of last submission as well as the new submittal number.
3. The "Item No." will be the same "Item No." as indicated on ENG FORM 4288-R for each entry on this form.
4. Submittals requiring expeditious handling will be submitted on a separate form.
5. Separate transmittal form will be used for submittals under separate sections of the specifications.
6. A check shall be placed in the "Variation" column when a submittal is not in accordance with the plans and specifications--also, a written statement to that effect shall be included in the space provided for "Remarks".
7. Form is self-transmittal, letter of transmittal is not required.
8. When a sample of material or Manufacturer's Certificate of Compliance is transmitted, indicate "Sample" or "Certificate" in column c, Section I.
9. U.S. Army Corps of Engineers approving authority will assign action codes as indicated below in space provided in Section I, column i to each item submitted. In addition they will ensure enclosures are indicated and attached to the form prior to return to the contractor. The Contractor will assign action codes as indicated below in Section I, column g, to each item submitted.

THE FOLLOWING ACTION CODES ARE GIVEN TO ITEMS SUBMITTED

- | | |
|---|---|
| A -- Approved as submitted. | E -- Disapproved (See attached). |
| B -- Approved, except as noted on drawings. | F -- Receipt acknowledged. |
| C -- Approved, except as noted on drawings.
Refer to attached sheet resubmission required. | FX -- Receipt acknowledged, does not comply
as noted with contract requirements. |
| D -- Will be returned by separate correspondence. | G -- Other (<i>Specify</i>) |
10. Approval of items does not relieve the contractor from complying with all the requirements of the contract plans and specifications.

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SECTION 01332

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11/02; Rev 01/03

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SECTION 01332

DESIGN AND CONSTRUCTION DELIVERABLES/PROCEDURES

11/02; Rev 01/03

PART 1 GENERAL

Attachments: Attachment A, Design Certification and Transmittal Letter
DD Form 1354 - Transfer and Acceptance of Military Real
Property
Instructions for Preparation of DD Form 1354

1.1 SUMMARY

1.1.1 Section Includes

a. Design

This section includes general requirements for developing and submitting a design including preparation of drawings, specifications, design analyses and other design deliverables conforming to the requirements contained in this section. Distribution requirements for design deliverables is also covered in this section. See Section 01336 60 PERCENT DESIGN REQUIREMENTS and Section 01338 100 PERCENT DESIGN REQUIREMENTS for specific requirements.

b. Construction

This section includes distribution requirements for the construction set of design deliverables and distribution requirements for DD Form 1354 and as-built drawings.

1.1.2 Section Excludes

This section does not include requirements for construction submittals which are specified in Section 01330, "Submittal Procedures."

1.2 REFERENCES

The references listed below form a part of this specification to the extent referenced.

1.2.1 THE CONSTRUCTION SPECIFICATIONS INSTITUTE (CSI)

CSI Masterformat

Master List of Section Titles and Numbers

1.2.2 OMAHA DISTRICT CADD STANDARDS MANUAL

(a) Omaha District AutoCADD Standards will be made available to the successful offeror. AutoCADD Standard utilize the National CAD standards with Omaha District refinements concerning file names, layers, colors, line widths, details and symbols. See Section 01040 AS-BUILT DRAWINGS for a summary of Omaha District file format and font requirements. The Contractor shall be responsible for furnishing the required CAD software.

(b) Corps of Engineers Civil Standards.

Corps of Engineers Civil Standards (Adobe Acrobat .pdf format) are included

on the solicitation CD-ROM and is located under the folder "CADDSTD"

file: civilstd.pdf

AutoCADD Civil Standards are available at:

ftp://aecadd@ftp.nwo.usace.army.mil/ae/ under folder labeled "Standard Drawings". This ftp is password protected. The successful offeror will be given access rights to this ftp site.

1.2.3 WEB SITES

In addition to the web sites listed in this section, other RFP Sections may list web sites where design criteria references used in this solicitation package may be found.

NOTE: FOR ITEMS (a), (b), AND (c) BELOW, REFERENCES TO RECEIVING APPROVAL FROM OTHER GOVERNMENT AGENCIES FOR ALTERNATIVE DESIGNS ARE NOT APPLICABLE TO THIS PROJECT. THE CONTRACTOR IS THE DESIGNER WHEN READING THESE DOCUMENTS.

ALL ITEMS LISTED BELOW ARE CONSIDERED TO BE A PART OF THE RFP SOLICITATION DOCUMENT (AS APPLICABLE) AND THE RESULTANT CONTRACT.

(a) TECHNICAL MANUALS (TM), TECHNICAL INSTRUCTIONS (TI), AIR FORCE MANUALS (AFM), ENGINEERING TECHNICAL LETTERS (ETL), ARMY ARCHITECTURAL AND ENGINEERING DESIGN CRITERIA (AEI), SUSTAINABLE DESIGN DOCUMENTS, AND MILITARY HANDBOOKS (MIL HANDBK) can be obtained from the National Institute of Building Sciences Construction Criteria Base (CCB) on CD-ROM. Contact the CCB directly at (202) 289-7800 for an order form or obtain an order form at the following internet address:

<http://www.ccb.org/ccbsubscribe/Subsmain.asp>. There is a regular annual subscription fee to the CCB (Price is noted on internet address, currently \$700 per year). The CCB is available on CD-ROM or DVD. Selected references are also available for downloading in Acrobat .pdf file format at the following internet address:

<http://www.hnd.usace.army.mil/techinfo>.

Additional web sites are as follows:

(1) TECHNICAL MANUALS, ETL's, ETC.:

www.usace.army.mil/inet/usace-docs

Click on "Information", then the desired publication.

(2) AIR FORCE DESIGN CRITERIA:

<http://afpubs.hq.af.mil>

(3) UNIFIED FACILITIES GUIDE SPECIFICATIONS (UFGS)

This includes UFGS sections referenced, but not provided in the solicitation and other UFGS sections required in developing the project specifications. Unless noted otherwise these Guide sections are located on the CD-ROM issued with solicitation (Specsintact files under a directory labeled "Guides" An Index of Available Edited And Unedited Guide

Specification sections is included in Attachment No. 6 of this RFP.

Specsintact software is available on the CCB referred to paragraph (a) above or may be downloaded at the following internet address:

<http://si.ksc.nasa.gov/specsintact/software/software.htm>

SI Version 4.0 (Version SI4.0.548) or later shall be used. The new unified submittal format shall be selected for file format. A copy of the software (SI Version 4.0) has been included on the CD-ROM issued with this solicitation. See folder: "Software", file "si.exe".

1.3 NOT USED

1.4 DEFINITIONS

1.4.1 Contractor

Firm or company to whom award was made to design and construct the 37th B1-B Squadron Operations Facility, FXBM 99-3001, located at Ellsworth AFB, South Dakota.

1.4.2 Design

Documents or deliverables, as defined in this section, prepared by or under the direct supervision of registered professional architects and engineers and proposed by the Contractor to meet the requirements of this solicitation.

1.4.3 Design Drawings

Documentation showing in graphic and quantitative form the extent, design, location, relationships, and dimensions of the construction to be provided by the Contractor. (Note: Shop Drawings, as defined in Section 01330, "Submittals Procedures" are not to be provided until after design drawings are determined satisfactory for construction.)

1.4.4 Designer

Architects and Engineers (A-E) associated with the Contractor who are responsible for (1) preparing the design documents, (2) checking construction submittals, considered extensions of design (A-E), for compliance with the prepared Construction set design documents and (3) have the qualifications and experience specified herein.

1.4.5 Request for Proposal (RFP)

Documents furnished to prospective offerors containing proposal information and specifying criteria and project requirements for design and construction of a 37th B1-B Squadron Operations Facility, FBBM 99-3001 located at Ellsworth AFB, South Dakota. The documents include this specification, attachments, and the RFP drawings.

1.5 QUALITY ASSURANCE

1.5.1 Construction Personnel Experience

The Construction Personnel experience shall be as submitted per the requirements of Section 00110 PROPOSAL SUBMISSION REQUIREMENTS,

INSTRUCTIONS, AND EVALUATION. If, because of reasons beyond the control of the construction firm, the named individuals are not able to fulfill this obligation, replacement personnel with similar skills and experience shall be presented for acceptance by the Contracting Officer. The Contractor shall obtain the Contracting Officer's written consent before making any substitution for these designated personnel.

1.5.2 Designer Qualifications and Experience

The designer qualifications and experience shall be as submitted per the requirements of Section 00110 PROPOSAL SUBMISSION REQUIREMENTS, INSTRUCTIONS, AND EVALUATION. If, because of reasons beyond the control of the design team, the named individuals are not able to fulfill this obligation, replacement personnel with similar education and experience shall be presented for acceptance by the Contracting Officer. The Contractor shall obtain the Contracting Officer's written consent before making any substitution for these designated personnel.

1.6 SUBMISSION OF DESIGN DRAWINGS, SPECIFICATIONS AND DESIGN ANALYSES

1.6.1 Design Certification

Within each design submittal, the Contractor shall certify that all items submitted in the design documents (after construction award) comply with Division 1 specifications and mandatory requirements of the UFGS and designated CEGS. The criteria specified in this RFP are binding contract criteria and in case of any conflict, after award, between the RFP criteria and Contractor's submittals, the RFP criteria will govern unless there is a written and signed agreement between the Contracting Officer and the Contractor waiving a specific requirement. The Contractor shall present with the letter of transmittal for each design submittal (including the 100% corrected design (backcheck) submittal) a certification that the submittal (plans, specifications, design analysis, etc.) complies with the requirements stated above, similar to that shown at Attachment A of this section.

1.6.2 Deviations

Deviations from the RFP technical requirements shall be identified in the letter of transmittal and design certification letter. Deviations from the RFP technical requirements will be considered and accepted by the Contracting Officer, if the changes results in a significant improvement to the project or it exceeds the minimum RFP technical requirements.

1.6.3 Field Inspection

The Contractor shall verify field conditions which are significant to design, by field inspection, researching and obtaining all necessary existing facility as-built drawings and reproducing them for his own use as necessary, and discussing status with knowledgeable personnel. The information shall be reflected in the design documents.

1.6.4 Drawings

1.6.4.1 Software Requirements

All design drawings shall be done by the Contractor using AutoCAD 2002 .dwg file format. Format shall conform to the Omaha District CADD Standards and the Omaha District CADD Design File and Sheet Naming Conventions. See

Omaha District CADD Standards requirements listed above.

1.6.4.2 RFP Drawings

The drawings furnished with this solicitation will be furnished to the Contractor in AutoCAD 2002 .dwg file format.

1.6.5 Design Documents

Design documents, as required by the 60 percent and 100 percent design submittals stated hereafter, shall include construction drawings, specifications, design analysis, and other design deliverables for categories such as, but not limited to, architectural, interior design, structural, mechanical, electrical, grading, drainage, paving, and outside utility services. Specifications shall be in sufficient detail to fully describe and demonstrate the quality of materials, the installation and performance of equipment, and the quality of workmanship. Detailing and installation of all equipment and materials shall comply with the manufacturer's recommendations. The design analysis shall be for each discipline of work and shall include all features with the necessary calculations, tables, methods and sources used in determining equipment and material sizes and capacities, and shall provide sufficient information to support the design.

1.6.6 Design Reviews

A minimum of two design reviews during design will be held at Ellsworth AFB at the 60 percent and the 100 percent completion stages of the final design. A backcheck review will be made on the Corrected 100 percent design. Once that the Corrected 100 percent design is reviewed and determined to be satisfactory for the purpose of beginning construction, the Contractor shall prepare and distribute sets of documents for construction. The Contractor shall attend the design reviews, visit the site and make other trips as necessary during the design to accomplish the work.

1.6.7 Document Packaging

The initial design submittal includes the 100 percent complete site, foundation, and site utility design and 60 percent complete building design.

The following design submittal includes 100 percent complete corrected site, foundation, and site utility design and 100 percent complete building design.

Subsequent design submittals include 100 Percent Corrected design and final project documents for Construction.

The 100% Corrected Design submittal is for making corrections resulting from review comments and for preparing the final project documents required for construction.

Documents, including each sheet of the drawings shall be stamped according to the corresponding level of completion: "For Review Only - 60 Percent Design", "For Review Only - 100 Percent Design", "For Review Only - 100 Percent Corrected Design" or "For Construction".

Each design submittal shall be a complete document, corresponding to the required level of completion.

No additional time for completion of the contract will be granted to the Contractor due to insufficient design submittals. See paragraph 3.7.6 "Government Design Review and Acceptance" for additional requirements.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.1 DRAWINGS

Prepare, organize, and present drawings in the format specified herein. Provide drawings complete, accurate and explicit enough to show compliance with the RFP requirements and to permit construction. Drawings illustrating systems proposed to meet the requirements of the RFP performance specifications shall reflect proper detailing for each such system to assure appropriate use, proper fit, compatibility of components and coordination with the design analysis and specifications required by this section. Coordinate drawings to ensure there are no conflicts between design disciplines and between drawings and specifications. For specific drawing requirements, see Sections 01336 60 PERCENT DESIGN REQUIREMENTS and 01338 100 PERCENT DESIGN REQUIREMENTS. The following subparagraphs cover general drawing requirements.

3.1.1 Drawings Format

Full size drawings are considered 28 inches x 40 inches. Half-size drawings are considered 14 inches x 20 inches. Title block shall be as indicated in the Omaha District CADD Standards Manual. Recommended drawing scales are specified in Sections 01336 60 PERCENT DESIGN REQUIREMENTS and 01338 100 PERCENT DESIGN REQUIREMENTS. The Cover Sheet of the Contractor prepared drawings shall bear the stamp or seal and signature of the registered architect or appropriate engineer responsible for the work and proposed to meet the RFP requirements. Drawing code numbers for the design and construction drawings shall be as follows:

AF 141-32-04

3.1.2 Drawings Sequence

Arrange drawings by design discipline in accordance with Omaha District CADD Standards Manual.

3.1.3 Drawings Required

As a minimum, the Contractor shall prepare and submit the following design drawings:

- a. Title Sheet, Index of Drawings, Legend and Abbreviations and Soil Borings.
- b. Civil Drawings
- c. Utility Drawings (Water Supply, Wastewater, Gas, and Electrical)
- d. Architectural Drawings

- e. Interior Design Drawings
- f. Structural Drawings
- g. Mechanical Drawings
- h. Plumbing drawings
- i. Electrical Drawings
- j. Fire Protection Drawings

3.2 SPECIFICATIONS

The Contractor shall develop project specifications utilizing the Division 1 Specifications furnished with this RFP; unedited Unified Facilities Guide Specifications (UFGS); designated specification sections furnished with this RFP; and the development of additional project specifications not covered by UFGS. Guide specifications are located on the CD-ROM issued with this solicitation.

The Contractor shall utilize Specsintact software.

Minimum and recommend hardware requirements are as follows:

MINIMUM REQUIREMENTS	RECOMMENDED REQUIREMENTS
486 (Windows 95/98/ME/NT/2000) Pentium NT/2000	Pentium 133 - Windows 95/98/ME Pentium 266 NT/2000
16MB RAM (Windows 95/98) 32MB RAM (Windows NT/ME) 64MB RAM (Windows 2000)	32MB RAM (Windows 95/98) 64MB RAM (Windows NT/ME) 128MB RAM (Windows 2000)
24MB (local) 56MB (Network) Free Hard Drive Space	50 MB (local) 75 MB (Network) Free Hard Drive Space
SVGA Monitor	SVGA Monitor with 800 x 600 resolution
3 1/2 inch 1.44 MB floppy drive	3 1/2 inch 1.44 MB floppy drive
CD ROM Drive	CD ROM Drive
Laser Printer	Laser Printer

Note: Additional Hard Drive space is required for storing project specifications and masters.

a. Technical Specifications

The Contractor shall be required to use unedited UFGS and designated unedited CEGS sections for developing project specifications. Specification paragraphs and subparagraphs shall not be rewritten to lessen the quality of the original technical specification sections, unless directed otherwise. The technical guide specifications describe the type and quality of material and installation normally acceptable for Construction, and often represent specific agreement between the Government and the applicable industry. The provision of the technical guide

specification should not be changed without justification. Justifications and identification for additional materials shall be identified in the design analysis under the appropriate design discipline. Designer notes shall not appear in any design submittals. Only bracketed choices and inapplicable items shall be marked for deletion. These items shall be removed in corrected 100 percent specifications submittal. The Contractor shall complete the editing of all options in these specifications. Where designer notes are provided, the Contractor shall edit the choice in accordance with the recommendations and guidance of the Notes, except where specific guidance has been provided with this RFP (i.e. submittal paragraph). See additional requirements in Sections 01336 60 PERCENT DESIGN REQUIREMENTS and 01338 100 PERCENT DESIGN REQUIREMENTS.

b. Editing Technical Specifications (Designated CEGS or UFGS)

(1) Incorporating Established RFP Requirements into Guide Specifications

Where specific requirements in regards to materials, methods and end function requirements are provided in the edited RFP Division 1 Sections provided in this RFP, the unedited Unified Facilities Guide Specifications (UFGS) and designated unedited CEGS (Omaha) shall be edited to reflect these requirements. Variations to these requirements will not be permitted, unless authorized as a design deviation by the Contracting Officer.

(2) Requirements of Guide Specifications Not Established By RFP Requirements

Where specific direction has not been provided in regards to materials, methods and end function requirements, the final requirements will be a result of the completed design by the Contractor.

The applicable unedited UFGS and designated CEGS (Omaha) Sections, Divisions 2 through 16, provide requirements for a variety of materials and systems. Deleting applicable requirements from these specifications will not be permitted, unless accepted as a design deviation by the Contracting Officer.

(3) ADDITIONS: If the specifications of the UFGS or designated CEGS does not cover a feature that is in the project, new sentences and/or paragraphs shall be inserted in the proper locations to adequately cover the feature of work. Additions shall not lessen the quality of materials indicated by the specifications. If a new material is added, it shall be properly referenced in "Applicable Publications," "MATERIALS," "SUBMITTAL," "TESTS," and "INSTALLATION" paragraphs, as applicable.

(4) DELETION OF INAPPLICABLE TEXT MATERIAL, AS NECESSARY, TO TAILOR THE SPECIFICATIONS TO FIT THE PROJECT: After deletion has been made to all inapplicable paragraphs, subparagraphs, choices, and schedules from the body of the specifications (including but not limited to the correction of lists in "Submittals," "Tests," and "Installation" paragraphs), delete all nonapplicable references listed in the preceding "APPLICABLE PUBLICATIONS" and "MATERIALS" paragraphs. Deletions shall not lessen the quality of materials indicated by the specifications.

(5) Do not remove any special code markings for submittals,

references, tests or section references, unless the text is not required.

(6) REFERENCES TO SPECIFICATION SECTIONS. The Contractor shall be responsible for coordinating section references, along with the technical requirements, to specific specification sections (number and title) within the project specifications. Section references (title and number) shall be revised to reflect the titles and numbers of specification sections used.

(7) REFERENCES. The Contractor shall be responsible for coordinating references or publications referenced in the text of each specifications with those references listed at the beginning of each section. See paragraph: Reports below. The Specsintact Software removes references or publications not referenced in the text from the Reference Article, when printing from the Jobs menu.

(8) SUBMITTALS. Each section of the specifications includes a submittal paragraph which lists all applicable Contractor submittals. Submittals shall be properly marked as outlined in the Specsintact documentation and in this section. These codings are used for automatic generation of the Submittal Register in the Specsintact Software. These codings must NOT be deleted from the text, unless the submittal is not required. The Submittal Item text between the coding shall be identical (word for word, including punctuation and spacing) to the paragraph text in the reference paragraph(s). Text may be either upper or lower case letters. An example of an submittal paragraph is listed below with text telling what each item stands for directly below each listing.

"1._ SUBMITTALS

Government review is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Fire Sprinkler Design Drawings; G-AE

SD-03 Product Data

Meters;

Regulators

SD-08 Manufacturer's Instructions

Dielectric Unions

Pressure Reducing Valves

SD-10 Operation and Maintenance Data

Wet Pipe Sprinkler System; G-AO

See Section 01330: SUBMITTAL PROCEDURES for the list of Submittal

Descriptions and Numbers and for submittal classification and further explanation of the submittal process.

Submittal Classifications (G-AE, G-AO, and FIO) are as follows:

G-AE - G-AE submittals are those that involve extensions of design (those that show design work performed by the Construction Contractor not previously included in the 100% Corrected for Construction drawings to include color boards and finish samples for major finishes such as paint, floor coverings, wall coverings, etc), or changes/variation in design. These submittals require knowledge of the design and must be reviewed and approved by the Contractor's Designer of the responsible design organization. The Government will review all G-AE approved submittals for conformance to the Solicitation. The Government will review all submittals designated as deviating from the Solicitation or completed design.

Typical G-AE type submittals:

Extensions of Design:

Note, for the following examples, the responsible designer will determine the criticality of each "extension of design" submittal and may, with the concurrence of the field office, change the review office to the field office.

1. Structural steel
2. Lawn irrigation systems
3. Concrete reinforcement
4. Millwork/casework
5. Masonry reinforcement
6. Fire Sprinkler Systems
7. Fire Detection Systems
8. Interior signage
9. Cathodic protection
10. Asbestos abatement layouts
11. Control systems
12. Security systems
13. Interior / Exterior Finishes
14. Furniture Systems
15. Pavement Concrete mix designs (special use - non routine, e.g., Airfield Paving)
16. Asphalt mix designs (special use - non routine, e.g., Airfield Paving)
17. Color boards
18. Finish samples for major finishes

Changes/Variation to Design:

- Design changes in material or function to the design

G-AO - G-AO submittals are those that need to be reviewed for conformance to the contract by either the Area or Resident Office (as directed). In general, G-AO submittals are those involving test procedures/reports, minor finish samples such as caulking and sealants, toilet accessories, etc and O&M Manuals and related information. In addition, G-AO submittals would include items which vary from the Solicitation package or 100% Corrected Design and other items as designated by the Contracting Officer's Representative. Submittals

shall be reviewed and approved by the Contractor's Quality Control Representative and Designer (if applicable), prior to submittal to the Government. Typical G-AO submittals are listed below.

- All Testing, Adjusting, and Balancing (TAB) submittals
- All System type testing procedures and acceptance reports (e.g., Fire Detection, Fire Protection, Security/Communication Systems, etc.)
- All O&M Manuals
- Other final operational type submittals such as Spare Parts Data, Framed Instructions, Warranty Information, etc.
- Training plans and schedules for Systems Training
- Minor finish samples

FIO - For Information Only. These submittals do not compliance review by the Government. These submittals shall be approved by the Contractor's Quality Control Representative and/or Designer, prior to submittal to the Contracting Officer's Representative. NOTE: "FIO" IS ANY SUBMITTAL ITEM THAT DOES NOT HAVE A "G-AE" OR "G-AO" CLASSIFICATION. SEE PARAGRAPH BELOW ON HOW TO CORRECTLY IDENTIFY A FIO SUBMITTAL.

For each submittal requirement in the Guide specification, designers shall indicate a submittal type (G-AE, G-AO, or FIO) or shall delete the requirement for the submittal. To designate a submittal item as FIO, mark the semi-colon following the submittal item and also the submittal tags up to the Item tag for deletion (i.e. "; [], []"). Designers shall identify submittal classifications for all required submittals.

(9) USE OF UFGS SECTIONS

UFGS sections are joint effort of the U.S. Army Corps of Engineers (USACE), the Naval Facilities Engineering Command (NAVFAC) and the Airforce Civil Engineer Support Agency (AFCEA). Unless directed to otherwise, use UFGS sections. Available UFGS sections include sections that have a 5 digit section number with either the letters "A" or "N" following the section number or no letter following the section number.

The letters designate the specification proponent ("A" is for USACE and "N" is for NAVFAC). The Contractor shall use sections with the letter "A" following the section number or sections with no letter following the section number. Sections with the letter "N" following the section number shall not be used unless there is no other available section, the solicitation directs the use of these sections or the available sections do not meet the solicitation requirements. Do not use Division 1 Sections that have the letter "N" following the section number. Where UFGS sections include tailoring options for both Army and Navy, use the Army tailoring option. Where conflicts exist that cannot be resolved, the Contracting Officer shall be contacted to resolve the issue.

c. Developing Additional Project Specifications.

If the need should arise for developing project specifications on materials/items not covered in by the UFGS or designated CEGS, the Contractor shall develop specifications utilizing commercial Construction Specifications Institute (CSI), 16 Division, 3 Part Section Format. These specifications shall conform to the applicable criteria requirements indicated in the solicitation. For these specification sections, write at the Mediumscope level of detail as described in CSI Masterformat. Use Mediumscope level section numbers and titles as identified in CSI

Masterformat. Adjust section numbers which conflict with the specifications used in the Project Specifications. Each of these developed specification sections shall be in the same format as the CSI format specifications included in the UFGS (including the submittal paragraph). Commercially available guide specifications such as "SpecText" published by The Construction Specifications Institute and "MasterSpec" published by The American Institute of Architects or Unified Facilities Guide Specifications (UFGS) may be used, subject to the format, coding and submittal paragraph requirements. References to the "Architect/Engineer" and the "Owner" shall be changed to refer to the "Government" or "Contracting Officer," as appropriate. The specifications shall clearly identify, where appropriate, the specific products chosen to meet the requirements of the specifications (manufacturers' brand names and model numbers or similar product information). The Contractor shall be responsible for coordinating references, along with the technical requirements, to specific specification sections (number and title) within the project specifications. Section references (title and number) shall be revised to reflect the titles and numbers of specification sections used.

d. Division 1 Sections

Include Division 1 specifications sections (01040 AS-BUILT DRAWINGS, 01200 WARRANTY OF CONSTRUCTION AND DESIGN, 01320A PROJECT SCHEDULE, 01330 SUBMITTAL PROCEDURES, 01355 ENVIRONMENT PROTECTION, 01451A CONTRACTOR QUALITY CONTROL, 01501 ELLSWORTH AFB SECURITY REQUIREMENTS 01670 RECYCLED/RECOVERED MATERIALS and 01781 OPERATION AND MAINTENANCE DATA contained in the RFP as part of the project specifications without change, except where directed otherwise. Copies of these sections and other Division 1 specifications included with the RFP are included on the solicitation CD-ROM in Specsintact. Any other Division 1 Specifications required by the Contract shall be the responsibility of the Contractor. The Contractor will be responsible for posting any amendments issued during the advertisement period.

3.2.1 Format for Project Specifications

Submit the project specification, including a Cover page and Table of Contents, printed with a word processor (Using Specintact software) using good quality white paper. For the 60 percent and 100 percent design submittals, editing of the CEGS and UFGS shall be shown as indicated in the Specsintact documentation for text deletions and for text insertions. The corrected 100 percent specifications with review comments incorporated shall be cleaned up (markings for insertion and deletion removed) and submitted in both hard copy and on magnetic media ("Specsintact " micro computer software package). The Cover page and attachments to specification sections shall be prepared in a Microsoft Word compatible with Microsoft Word 2000 format. Carbon copies are not acceptable.

Format shall be as outlined in the Specsintact documentation.

Each specification section shall include a Section Table of Contents which is combined with the page numbering of the specification section.

The Cover page shall be similar to the RFP Cover page and shall include:

- a. Project title, Project Number, activity and location
- b. Construction contract number

- c. Construction Contractor's name and address
- d. Design firm's name and address
- e. Names of design team members (Designers of record) responsible for each Contractor prepared technical discipline of the project specification
- f. Name and signature of a Principal of the design firm

The Table of Contents shall list the 16 Divisions contained in CSI format and the specification section numbers and titles contained in the project specification.

3.2.2 Reports

The Contractor shall submit the following Specsintact reports with the 100 percent and Corrected 100 percent design submittals: Address Verification, Reference Verification, Section Verification, Bracket Verification, Submittal Verification, Submittal Register and any other reports requested by the Contracting Officer. References shall be reconciled when printing reports. The reports to be submitted for review shall be after the Contractor has corrected the errors generated by these reports. From the errors generated by the reference verification reports, fix only those errors where there is a discrepancy with the issue date of a publication (i.e., NFPA 70, revise to the latest code requirement). Address, Reference and Submittal Reconciliation shall be completed prior to submittal of the 100 percent design.

3.2.3 Construction Submittals

All construction submittals shall be in accordance with Section 01330, "SUBMITTAL PROCEDURES".

Construction submittal types and products, including the submittal description numbers and data package numbers, shall be included in the specification sections, where required. When appropriate, use specific product terms instead of the generic product terms contained in the specifications sections (e.g., asphalt shingles, built-up roofing, EPDM single ply, etc. vs roof covering; concrete masonry units, brick, metal siding, etc. vs exterior skin; mineral fiber board, block, batt or blanket, polystyrene, polyurethane, polyisocyanurate board vs insulation).

3.2.3.1 Submittals Register (Form)

Prepare and maintain a Submittals Register. The Submittal Register (ENG Form 4288 "Submittal Register" shall be prepared using Specsintact Software. Additional instructions for completing the form are contained in Section 01330, "Submittal Procedures."

Fill in columns "c" through "f" and submit with the 100 percent design submittal. The Submittal Register will be returned to the Contractor along with the reviewed and accepted design.

Resubmit the Submittal Register as a construction submittal as required in Section 01330, "SUBMITTAL PROCEDURES." The Contractor shall provide an electronic copy of the accepted submittal register (navy4288.txt file), generated by the Specsintact software, three (3) working days prior to the pre-construction conference. Remaining columns will be filled in at the

appropriate time and by the appropriate authorities during construction.

3.3 DESIGN ANALYSES

Prepare design analyses (basis of design and calculations) for each design discipline. Specific requirements relative to the technical content to be provided are specified herein and in Section 01336 60 PERCENT DESIGN SUBMITTALS and Section 01338 100 PERCENT DESIGN SUBMITTALS. The design analyses shall include a basis of design and calculations for each discipline. The design analyses shall be a presentation of facts to demonstrate that the concept of the project is fully understood and that the design is based on sound engineering. The design analysis for each discipline shall include:

a. A basis of design consisting of:

(1) An introductory description of the project concept which addresses the salient points of the design;

(2) An orderly and comprehensive documentation of criteria, rationale, assumptions and reasoning for system selection.

b. Calculations required to support the design.

c. Project Engineering Considerations and Instructions (ECI) for Final Design Analysis.

The Contractor shall not make reference to the RFP solicitation to avoid stating the requirements for the basis for design.

3.3.1 Format

The design analysis shall include: a cover page indicating the stage of design "PRELIMINARY DESIGN ANALYSIS*": for 60 percent design submittal and "FINAL DESIGN ANALYSIS" for 100 percent design submittal, the project title "37TH B1-B SQUADRON OPERATIONS FACILITY, FXBM 99-3001", fiscal year and program funding "FY 2003 MCAF", location "SCHRIEVER AFB, COLORADO", who prepared the design analysis "Prepared By:" followed by Name of AE and Construction Contractor, location of AE and Construction Contractor Office involved with the design, and construction contract number; table of contents; and tabbed separations for each part of design analysis for quick reference. The cover sheet shall indicate the volume number and total number of volumes for the project. Asterisk note for 60 percent design submittal shall read "*** - Design for Site Work, Foundation, Long Lead Items noted and Utilities are 100 Percent complete**". Provide a cover sheet for each volume. Submit design analyses prepared on 8 1/2 by 11 inch white paper. The design analysis for all disciplines shall be bound in one volume, excluding calculations. Multiple volumes for individual disciplines, appropriately numbered, may be provided, when required. For Electronic media requirements, see the NOTES for the Construction Set Distribution (paragraph 3.7.1.6). Narratives shall be provided in decimal paragraph numbering system (i.e. 1, 1.1, 1.1.1, 1.1.1.1 etc.). Narratives shall be an original document that does not copy the text from the RFP document sections, unless directed otherwise and shall be written in the same tense (Past or Present) for the entire design analysis. Each part of the design analysis shall include part number and page numbering (consecutive page numbering for each part). Organize design analysis narrative into the following parts, as follows:

3.3.1.1 Part 1 - General Description.

This part will provide statements of purpose, authority and applicable criteria. A description of the project and a summary of the economic factors influencing the choice of the civil, architectural, structural, mechanical, electrical, fire safety, water supply and wastewater disposal systems used in the project shall be provided along with an indication of how initial and life costs were considered.

a. Purpose. Include the following statement under the heading of "PURPOSE":

"The purpose of this project is to consolidate into a single facility the 37th B1-B Squadron Operations to allow efficient and effective operations."

b. Authority. Provide the following authorization statement under the heading "AUTHORITY" for the project:

"The preparation of design documents was authorized by Design Directive 1 dated 30 August 2002."

c. Applicable Criteria. Provide a list of the general criteria that pertains to all disciplines used in the design. Specific criteria used in a particular engineering/architectural discipline shall be listed in the text of the appropriate discipline in Part 2 of the design analysis. Such criteria shall be referenced accordingly.

d. Project Description. Provide a description of the project and summary of economic factors influencing the choice of materials and systems used in the project.

3.3.1.2 Part 2 - Design Requirements and Provisions.

This part of the design analysis shall provide statements of factors considered and provided in the design along with supporting justification of design decisions and design calculations. Include narratives for each of the following areas or disciplines. See Sections 01336 60 PERCENT DESIGN REQUIREMENTS and 01338 100 PERCENT DESIGN REQUIREMENTS for specific requirements.

- a. Civil
- b. Water Supply and Wastewater
- c. Architectural
- d. Interior Design
- e. Structural
- f. Mechanical
- g. Electrical
- h. Fire Protection
- i. Environmental Protection, Compliance and Permits
- j. Health and Safety

k. Sustainable Design

3.3.2 Calculations

All calculations shall be placed in separate appendix volume(s). Calculations shall include a cover page similar to the design analysis narrative cover page, a table of contents, index page and a summary of criteria for each appendix on the first pages and the project title, and location identified on every page of the calculations. All calculation pages shall be clearly legible and photo-ready. Each discipline which requires calculations shall be consecutively numbered (Example: A-1, A-2, A-3 etc. for Water Supply and Wastewater Calculations and B-1, B-2, B-3, etc. for Structural Calculations) and the date. Cite criteria from which the calculations, rationale, and formulae are extracted by publication number, title, edition and page number. The cover page and each page of calculations shall also include the names of the persons originating and checking the calculations. The person checking the calculations shall be a registered professional engineer other than the originator. In addition, the signature and seal of the appropriate registered professional engineer responsible for the work shall appear on the cover page of the calculations for each discipline. Each appendix index page shall list subtopics (e.g. for Structural - Loads, Materials, References, Wind Analysis, Footing Design, Wall Design, Column Design, etc.) with pages numbers where each of these subtopics can be found in the calculations.

Computer printouts shall be consecutively page numbered and identified similar to the calculations. Identify the computer program name, source, and version. All schematic models used for computer input shall be provided.

3.3.3 Engineering Considerations and Instructions (ECI) for Field Personnel

3.3.3.1 Separate Appendix

Under a separate appendix in the Final Design Analysis, the Design-Build Contractor shall include the following items:

- a. Features critical to the quality of the final construction product requiring special attention.
- b. Submittals requiring special attention during construction.
- c. Special user requirements or instructions.
- d. Assumed field conditions, pertinent significant aspects, or critical phases of the project used as a basis of project design.

3.3.3.2 Format

Format for ECI's shall include the following information:

"ENGINEERING CONSIDERATIONS AND INSTRUCTIONS

Project Name: _____

Location: _____

Designer Name: _____ Phone: _____

Discipline: _____

Design-Build designers have prepared the following engineering considerations and instructions (ECI). These ECI's should be followed during the construction of the above project. If you have any questions, contact the appropriate Design-Build designer."

3.3.3.3 Distribution of ECI's

In addition to including ECI's in a separate appendix of the final design analysis and after acceptance of the 100 percent corrected design and prior to the start of construction, the design-build Contractor shall e-mail a copy of the ECI's to the appropriate U.S. Army Corps of Engineer's Field representative for his consideration with a copy also sent to the appropriate individual in following office(s): CENWO-CD-QR and CENWO-PM-M.

The Government will provide the names and e-mail addresses to the design-build Contractor at either the pre-design or pre-construction conference.

3.3.4 Requests for Information, Meeting Minutes and Comments

Copies of Requests for Information (RFI) made by the Contractor to the Government shall be included as an appendix to the design analysis. An index of each RFI, which documents the RFI number, the date RFI given to Government, the date the RFI is answered and the Action Response provided by the Government.

A copy of all meeting minutes and design review comments (if any) with action responses shall be included as an appendix to the design analysis.

Appendices for RFI's and Meeting Minutes and design review comments shall have page numbering that follows the same format as for Calculations listed above.

3.4 DESIGN CERTIFICATION

The Contractor shall provide certification signed by an officer of the Contractor's company attesting that the drawings, specifications and design analyses prepared for the construction of the facility meet the requirements of the RFP. The certification shall accompany the submission of the design documents along with names and disciplines for the designers of record. This design certification shall include a list of deviations (variations) from the solicitation or accepted final design. Prepare the design certification and transmittal letter in the format shown on Attachment A included at the end of this section.

3.5 60 PERCENT DESIGN SUBMITTALS

See Section 01336 60 PERCENT DESIGN REQUIREMENTS.

3.6 100 PERCENT DESIGN SUBMITTALS

See Section 01338 100 PERCENT DESIGN REQUIREMENTS.

3.7 DESIGN AND CONSTRUCTION DELIVERABLE SUMMARIES, DOCUMENT DISTRIBUTION AND GOVERNMENT REVIEW

3.7.1 Distribution of Design Documents for Conformance Review

(a) Government agencies shall receive review documents thirty (30) days prior to review conferences. The documents will be in their then-present "on-board" design status (except for the 100% design submittal). Agencies reviewing documents, and in the quantities indicated, are listed below. All documents must contain an index of contents. Work shall continue during the review period between the 60% design submission and the 60% design review conference. Work shall be 100% complete when the 100% design is submitted. Design work shall not continue during the review period between the 100% design submission and the 100% design review conference. All submittals shall be transmitted by **express mail**. Originals of transmittal letters should be sent to the Omaha District and copies should accompany each mail package. Transmittal letters shall indicate distribution by use of the "ATTN" code shown in the address. Design document set shall include the items listed below. Some of the Construction submittals are also listed. Design submittals shall be submitted as a complete package. The distribution listed below also applies to all design reviews and design package accepted for construction.

(b) If the Government requires more time than the thirty (30) days given, prior to either of the review conferences, the Contractor will be granted an extension of time equal to the number of calendar days of delay.

(c) The Government requires fourteen (14) days to review 100 Percent Corrected Design submittals after receipt of these documents. If the Government requires more than the days given, the Contractor will be granted an extension of time equal to the number of calendar days of delay.

3.7.1.1 Submittal Items

The submittal items listed below are intended to identify the different design submittals required throughout the design process and select submittals required during and at the completion of Construction. Each submittal item has an Abbreviation, which will be used in conjunction with the number of required copies. See paragraphs 3.7.1.3 through 3.7.1.7 for required copies for distribution.

SUBMITTAL ITEM - ABBREVIATION

Design Analysis Narrative - **DANar**
Design Analysis Calculations - **DACalcs**
Specifications - **Specs**
Specification Error Reports - **SpecER**
Submittal Register - **SubReg**
Drawings (1/2 size) - **Dwg-1/2**
Drawings (Full size) - **Dwg-full**
Meeting Minutes with Annotated Comments and Other Attachments - **MMin**
As-Built Drawings - **Asblt**
Electronic Media Drawings - **EMDwg**
Electronic Media Specifications - **EMSpecs**
Electronic Media Design Analysis - **EMDA**
Design Certification Letter - **DCLet**
Color Board - **ColBd**
DD Form 1354 - Transfer and Acceptance of Military Real Property - **DD1354**
Environmental Protection Plan - **EP Plan**
Engineering Considerations and Instructions - **ECI**

The Green Building Rating System LEEDS Questionnaire - **LEED**
Backcheck Review Comments - **Brvw Cmnts**

3.7.1.2 Activity Distribution Addresses

Engineering Division
 Attn: CENWO-PM-M (Kevin Pace)
 U.S Army Engineer District, Omaha
 106 South 15th Street
 Omaha, NE 68102-1618

Construction Division
 Attn: CENWO-CD-Q
 U.S. Army Engineer District, Omaha
 106 South 15th Street
 Omaha, NE 68102-1618

Black Hills Area Engineer
 Attn: CENWO-CD-BH, Attn: Mark Mailander
 U.S. Army Corps of Engineers
 631 Saint Aime St., Suite 101
 Rapid City, South Dakota 57701

Headquarters Air Combat Command
 ATTN: HQ, ACC/CECW, Attn: Conrad Browe
 129 Andrews Street, Suite 315
 Langley AFB, VA 23665

28th Civil Engineering Squadron
 ATTN: 28 CES/CECN, Attn: Larry Herges
 2149 Scott Drive
 Ellsworth AFB, CO 57706

CENWO-CD-BH WILL DISTRIBUTE COPIES TO CES/CECN

3.7.1.3 60 Percent Design Distribution

See paragraphs above explaining Submittal Abbreviation Codes and Activity Distribution Addresses. The number of copies required for each submittal item are listed below.

<u>Activity</u>	<u>CENWO-PM-M</u>	<u>CENWO-CD-Q</u>	<u>CENWO-CD-BH</u>	<u>HQ, ACC/CECW</u>
<u>Submittal</u>				
<u>Item</u>				
DANar-	10	2	15	2
DACalcs-	6	2	7	2
Specs-*(1)	10	2	15	4
Dwg-1/2-	10	2	15	4
MMin-*(2)	10	2	15	1
EMDwg-	1*(3)	-	-	-
DCLet-	10	2	15	1
ColBd-	1	-	1	1
EP Plan	1	-	2	-

***60 PERCENT SUBMITTAL NOTES:**

Specific submittal requirements are identified in Sections 01332 and 01336

*(1) Copy shall show deletions and insertions (Revisions On) for all UFGS

and designated CEGS specifications submitted. Process and Print Options for each section furnished shall include the following minimum requirements: Under "Sections" Print/Process Sections and Renumber Paragraphs boxes are checked; Under "Reports" a Section Table of Contents (Include Without Scope and Combine sections and section tables of contents); Under "Options" Section Dates shown, Units of Measure as english, Tags are Hidden, Notes are hidden, Revisions are shown, Start Page Numbering with "1", and Restart for each section box is checked; and Under "Header/Footer" jobtitle and jobname as a Header and Section number and Page number as a footer (similar to format shown on this section of the RFP).

*(2) To be submitted after Review Conference per requirements of this section.

*(3) Electronic Media Drawings:

Fifteen (15) percent of all drawings (excludes Cover Sheet, Vicinity Map, Location Plan and Indexes), representative of all design disciplines, shall be submitted in AutoCAD 2002 on CD-ROM to verify that the CADD standards being specified are complied with.

3.7.1.4 100 Percent Design Distribution

See paragraphs above explaining Submittal Abbreviation Codes and Activity Distribution Addresses. The number of copies required for each submittal item are listed below.

Activity CENWO-PM-M CENWO-CD-Q CENWO-CD-BH HQ, ACC/CECW

Submittal
Item

DANar-	10	2	15	2
DACalcs-	6	2	7	2
Specs-*(1)	10	2	15	4
SpecER-	1	1	-	-
SubReg-	2	2	2	-
Dwg-1/2-	10	2	15	4
MMin-*(2)	10	2	15	1
EMDwg-*(3)	1	-	-	-
DCLet-	10	2	15	1
Colbd-*(4)	1	-	1	1
EP Plan	1	-	2	-
ECI-	10	2	4	1

*100 PERCENT SUBMITTAL NOTES:

Specific Submittal requirements are addressed in Section 01332 and 01338.

*(1) Copy shall show deletions and insertions (Revisions On) for all UFGS and designated CEGS specifications submitted. Process and Print Options for each section furnished shall include the following minimum requirements: Under "Sections" Reconcile References, Print/Process Sections and Renumber Paragraphs boxes are checked; Under "Reports" a Section Table of Contents (Include Without Scope and Combine sections and section tables of contents), and Reference Verification, Submittal Verification, Reference Verification, Submittal Verification, Bracket Verification, Section

Verification and Submittal Register boxes are checked; Under "Options" Section Dates shown, Units of Measure as english, Tags are Hidden, Notes are hidden, Revisions are shown, Start Page Numbering with "1", and Restart for each section box is checked; and Under "Header/Footer" jobtitle and jobname as a Header and Section number and Page number as a footer (similar to format shown on this section of the RFP).

*(2) To be submitted after Review Conference per requirements of this section.

*(3) Electronic Media Drawings:

Fifteen (15) percent of all drawings (excludes Cover Sheet, Vicinity Map, Location Plan and Indexes), representative of all design disciplines, shall be submitted in AutoCAD 2002 on CD-ROM to verify that the CADD standards being specified are complied with.

*(4) Color boards shall show actual color samples of all proposed exterior and interior finishes.

3.7.1.5 100 Percent Corrected Design Distribution

See paragraphs above explaining Submittal Abbreviation Codes and Activity Distribution Addresses. The number of copies required for each submittal item are listed below.

<u>Activity</u>	<u>CENWO-PM-M</u>	<u>CENWO-CD-Q</u>	<u>CENWO-CD-BH</u>	<u>HQ, ACC/CECW</u>	
<u>Submittal</u>					
<u>Item</u>					
DANar-	10	2	15	1	
DACalcs-	6	2	7	1	
Specs-*(1)	10	2	15	1	
SpecER-	1	1	-	-	
SubReg-	2	2	2	-	
Dwg-1/2-	10	2	15	1	
EMDwg-*(2)	1	-	-	-	
DCLet-	10	2	15	1	
Colbd-*(3)	1	-	1	1	
EP Plan	1	-	2	-	
ECI-	10	2	15	1	LEED
	1	-	1	1	

*100 PERCENT CORRECTED SUBMITTAL NOTES:

Specific Submittal requirements are addressed in Section 01332 and 01338.

*(1) Copy shall show revisions executed (deletions removed and insertions markings removed) for all specification sections submitted. Process and Print Options for each section furnished shall include the following minimum requirements: Under "Sections" Reconcile References and Addresses, Print/Process Sections and Renumber Paragraphs boxes are checked; Under "Reports" a Section Table of Contents (Include Without Scope and Combine sections and section tables of contents), and Reference Verification, Submittal Verification, Reference Verification, Submittal Verification, Bracket Verification, Section Verification and Submittal Register boxes are checked; Under "Options" Section Dates shown, Units of Measure as english,

Tags are Hidden, Notes are hidden, Revisions are hidden, Start Page Numbering with "1", and Restart for each section box is checked; and Under "Header/Footer" jobtitle and jobname as a Header and Section number and Page number as a footer (similar to format shown on this section of the RFP).

*(2) Electronic Media Drawings (AutoCAD 2002) on CD-ROM shall be submitted to verify that the CADD standards being specified are complied with.

*(3) Color Boards are not required if there are no changes from the previous design submittal and if only minor changes are required, submit applicable coded samples (with tape ready for application) and corrected color legend. If major changes to the color board are required, resubmit the Color boards with actual color samples of all proposed exterior and interior finishes and revised corrected color legend.

3.7.1.6 Construction Set Distribution

See paragraphs above explaining Submittal Abbreviation Codes and Activity Distribution Addresses. The number of copies required for each submittal item are listed below.

Activity CENWO-PM-M CENWO-CD-Q CENWO-CD-BH HQ, ACC/CECW

Submittal
Item

DANar-	10	2	15	1
DACalcs-	6	2	7	1
Specs-*(1)	10	2	15	1
SpecER-	1	1	-	-
SubReg-	2	2	2	-
Dwg-1/2-	10	2	15	1
Dwg-full-*(2)	-	-	2	-
EMDwg-*(3)	4	-	-	-
EMSpecs-*(3)	4	-	-	-
EMDA-*(3)	4	-	-	-
DCLet-	10	2	15	1
ECI-	10	2*(4)	15*(4)	1
Colbd-*5	-	-	1	-
Brvw Cmmts	10	2	15	1

*CONSTRUCTION SET SUBMITTAL NOTES:

Specific Submittal requirements are addressed in Section 01332 and 01338.

*(1) Copy shall be the same as the 100 percent Corrected submittal and incorporate any additional comments made to 100 percent corrected design submittal.

*(2) Each drawing sheet shall be stamped (P.E.) by the appropriate Designer.

*(3) Electronic Media Drawings (AutoCAD 2002), Electronic Media Specifications (Specsintact), and Electronic Media Analysis (MS Word (compatible with MS Word 2000) and Adobe Acrobat 5.0. The Design Analysis Calculations shall be included with the design analysis narrative and shall be scanned and saved in Adobe Acrobat 5.0. The design analysis and calculations shall utilize bookmarks for each chapter of the design

analysis and each appendix or calculations.

Electronic Media shall be on CD-ROM (Recordable compact disk with minimum 650 megabyte capacity)

*(4) In addition, the Contractor shall e-mail the designated offices a copy of the ECI per requirements stated in this section.

*(5) Reflects all changes made through accepted 100 Percent Corrected Design.

3.7.1.7 As-Built Submittals

See paragraphs above explaining Submittal Abbreviation Codes and Activity Distribution Addresses. The number of copies required for each submittal item are listed below.

<u>Activity</u>	<u>CENWO-PM-M</u>	<u>CENWO-CD-Q</u>	<u>CENWO-CD-BH</u>	<u>HQ, ACC/CECW</u>
<u>Submittal</u>				
<u>Item</u>				
Asblt-	*	-	-	1
DD1354-	1	1	2	1

*NOTES for As-Built Submittals:

*See Section 01040, AS-BUILT DRAWINGS for requirements.

3.7.1.8 Design Submittal Alternative

The design-build Contractor may submit an electronic copy of the design analysis, design analysis calculations and appendices, specifications, specification error reports, submittal register, design certification letter with deviations, and engineering considerations and instructions on CD-ROM in an Adobe Acrobat 5.0 .pdf format and maximum of 1 hard copy per office per submittal listed above (CD's are substituted for hard copy numbers). If this alternative is selected, each of these documents shall utilize bookmarks with titles, which ease the review of the design. Each design submittal item and submittal item components shall be made easy to find (i.e. each specification section, chapters and appendices of design analysis, and each submittal item). This alternative will only be allowed if the design-build Contractor presents a legible and easy to review design. Failure to meet this requirement on one design submittal will result in requiring all future submittals and resubmittals to be hard copy as required above, at no additional cost to the Government.

3.7.2 Review Comments:

For each design review submittal, the Contractor will be furnished comments from Omaha District and other agencies involved in the review process approximately 21 days after receipt, unless indicated otherwise. Review conference for the 60 Percent and 100 Percent Design submittals will be held approximately 30 days after receipt. If the Contractor disagrees technically with any comment or comments and does not intend to comply with the comment, he/she shall clearly outline, with justification reasons for noncompliance at the design review conference in order that the comments can be resolved. Annotated comments, including the disposition of all comments shall be furnished in writing by the Contractor within [five (5) days] of the review conference and shall be recorded in the Contractor prepared Meeting Minutes described in paragraph 3.7.6.1. The written

documentation shall be forwarded in the same quantities to the distribution list shown in paragraph: "Distribution of Design Documents for Conformance Review" above.

The Government will review the 100% Backcheck Review Documents for a period of fourteen (14) days after receipt of the documents. After this review, a formal letter will be sent to the Contractor allowing him to commence construction or rejecting the submittal.

Any backcheck review comments made by the indicated Government agencies to the 100 percent Corrected Design Submittals shall be resolved prior to distribution of Construction Set documents. The Contractor shall furnish copies of Annotated backcheck review comments indicating disposition of all comments with the Construction document set.

3.7.3 Using Automated Review Management System:

Conference and post conference action: Government personnel, from the above Government Agencies, will present review comments for discussion and resolution. Copies of comments, annotated with comment action agreed on, will be made available to all parties before the conference adjourns. Unresolved problems will be resolved by immediate follow-on action at the end of conferences. Valid comments will be incorporated. After receipt of final corrected design documents upon incorporation of all backcheck comments (as many backchecks as are deemed necessary by the Government will be conducted), the Omaha District will recommend acceptance to proceed with construction. The Government intends to utilize the Dr. Checks review system, which is available at:

<http://65.204.17.188/projnet/home/version1/index.cfm>, for processing review comments and responses. Access rights will be provided to the Design-Build Contractor after contract award. The Government, however, reserves the right to not accept design document submittals and withhold design payments, if comments are of too great a significance. In this case, every effort shall be made during follow-up action between the Contractor and the Omaha District to resolve conflicts and problems such that documents can be fully accepted. However, if final submittal(s) are incomplete or deficient, requiring correction by the Contractor and resubmittal for review, the cost of rehandling and reviewing will be deducted from payment due the Contractor at the rate of \$1500.00 (for each design discipline requiring resubmittal) per submittal. "Design Disciplines" in this paragraph consist of Architectural, Structural, Interior Design, Mechanical, Electrical, Civil/Site work, and Fire Protection.

3.7.4 Delays

Delays caused by the Contractor in completion of the 60 percent design, the 100 percent design or the 100 percent corrected design will not be considered as valid reason to delay completion of the entire design. The Government may not be held liable for delays caused by re-submittal efforts caused by designs submitted, which are rejected by the reviewers.

3.7.5 Reproduction (For Construction):

Upon the Government's completion of the review of the 100% Corrected Design submittal, the Contractor shall reproduce copies of the design documents (accepted for the purposes of beginning construction), subject to the incorporation of the Corrected 100% design review comments. The Cover Sheet of the Contractor prepared drawings shall bear the stamp or seal and signature of the registered architect or appropriate engineer responsible

for the work and proposed to meet the RFP requirements. The date on each drawing shall reflect the month and year that the drawings were cleared for the purposes of beginning construction. The Cover Sheet of the drawings, Cover Sheet of the Specifications, and Cover Sheet of the Design Analysis shall include the date that the design documents were cleared for the purposes of beginning construction. The Contractor shall provide corrected 100 percent specifications in both hard copy and electronic media (Specsintact Software Version as noted above or later). Distribution shall be as indicated above. The originals will be retained by the Contractor for recording of as-built conditions. Upon completion of the project, the accepted design documents corrected to reflect as-built conditions shall be supplied to the Government. See Section 01040 AS-BUILT DRAWINGS for as-built drawing requirements.

3.7.6 Government Design Review and Acceptance

3.7.6.1 Design Review Conference and Post-Design Review Conference Action:

All design review conferences shall be held on Ellsworth AFB. Government personnel will forward review comments to the Contractor for discussion and resolution prior to the design review conference. Copies of comments, annotated with comment action agreed on, will be made available to all parties before the design review conference adjourns. Unresolved problems will be resolved by immediate follow-on action at end of conferences. Valid comments will be incorporated. Upon satisfactory Government review of the 100 percent corrected design documents, the Omaha District will formally provide Government acceptance necessary to initiate construction. The Government, however, reserves the right to not accept design document submittals and to withhold design payments, if comments are of too great a significance. In this case, every effort shall be made during follow-up action between the Contractor and the Omaha District to resolve conflicts and problems such that documents can be fully accepted. However, if final submittal(s) are incomplete or deficient, requiring correction by the Contractor and resubmittal for review, the cost of rehandling and reviewing will be deducted from payment due the Contractor at the rate of \$1500.00 (for each design discipline requiring resubmittal) per submittal. The Contractor shall submit to the Contracting Officer within five (5) calendar days, two two (2) copies of meeting minutes summarizing major decision points and issues which requires resolution and the action office. Annotated comments shall be attached to these minutes.

3.7.6.2 Complete Design Documents

The Contractor shall submit complete design documents in the same quantity and to the same offices listed above in paragraph "**Distribution of Design Documents for Conformance Review**", for each corrected 100 percent design submittal (one or more) until the Government is satisfied that all review comments have been addressed and resolved.

3.7.6.3 Accuracy and Completeness of Design

Reviews by the Government of the design documents shall not be construed to be an endorsement of the accuracy or completeness of the design. Design deficiencies or omissions in the accepted design shall be the responsibility of the Contractor.

3.7.7 DD Form 1354, Transfer and Acceptance of Military Real Property

The Contractor shall provide, for acceptance, a completed DD Form 1354

"Transfer and Acceptance of Military Real Property" (Copy attached at the end of this section) with the 100 percent corrected design documents. DD Form 1354 shall be filled out in accordance with attached Instructions for Preparation of DD Form 1354 and Army Pamphlet 415-28 "Guide to Army Real Property Codes" (Copy dated 02/11/2000 is available at the following website: http://www.usapa.army.mil/usapa_home.asp (Under "Search Publications" for "415-28" or on solicitation CD-ROM in an Adobe Acrobat .pdf format under UFGS specification folder labeled "GUIDES", file name "p415_28.pdf".) The number of copies of the completed DD Form 1354 is noted above.

3.8 REVISIONS TO THE ACCEPTED DESIGN

(a) The accepted design will be used by all parties involved in construction and in administration of the contract. Therefore, it is imperative that the design documents be kept up to date and an effective system of making and distributing changes be implemented. Since changes to the design increase risk of construction errors and deplete available administrative resources, every effort shall be made to minimize revisions to the accepted design. One of the measures of the Contractor's effectiveness of management will be how well the goal of minimizing changes to the accepted design is met. The use of effective quality control during design, and utilization of experienced and capable designers are some of the means that are expected to be used to accomplish this goal.

(b) If revisions to the accepted design become necessary, the procedures described in Section 01330 SUBMITTAL PROCEDURES will be used to accomplish the revisions. The revisions will be considered a "Variation" and shall be submitted as a "G-AO" submittal. All the requirements in paragraph: "Variations" in Section 01330 SUBMITTAL PROCEDURES will apply to revisions to the accepted design. All design analysis and calculations necessary to establish that the proposed revision satisfies applicable design requirements shall be included in the submittal.

Attachment A

[Contractor's Letterhead]

[Date: _____]

[Contract No. _____]

[Reviewing Component Address]

Subj: DESIGN CERTIFICATION AND TRANSMITTAL FOR
[Project Title _____]
[Project Location _____]
[Contract No. _____]

Gentlemen

Enclosed are the following documents, which I hereby certify are in compliance with the RFP requirements of the subject construction contract and can be used to commence construction subject to Government approval:

1. Design Drawings
2. Project Specification
3. Design Analysis
 - a. Civil
 - b. Water Supply and Wastewater Collection
 - c. Architectural
 - d. Interior Design
 - e. Structural
 - f. Mechanical
 - g. Fire Protection
 - h. Electrical
 - i. Environmental Protection, Compliance and Permits
 - j. Health and Safety
 - k. Sustainable Design
4. Submittals Register
5. All other Design Deliverables
6. Deviations (List of Deviations with Justification Attached)

[Typed Name and Signature of an
Officer of the Contractor's Company]

Copy to:
[As standard with the Contractor]

-- End of Section --

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TRANSFER AND ACCEPTANCE OF MILITARY REAL PROPERTY														Form Approved OMB No. 0704-0188			
PAGE OF PAGES																	
Public reporting burden for this collection of information is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, Va 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.																	
1. FROM (Installation/Activity/Service and Zip code)				2. OPERATING UNIT		3. DISTRICT CODE		4. OPERATING AGENCY		5. DATE		6. JOB NUMBER		7. SERIAL NUMBER		8. CONTRACT NUMBER	
9. TO (Installation/Activity/Service and Zip code)				10. OPERATING UNIT		11. DISTRICT CODE		12. OPERATING AGENCY		13. ACCOUNTING NUMBER		14. ACCOUNTABLE OFFICE NUMBER		15. TYPE OF TRANSACTION		16. PROJECT NUMBER	
												A. <input type="checkbox"/> NEW CONSTR. <input type="checkbox"/> EXISTING FAC. <input type="checkbox"/> CAPITAL IMP. <input type="checkbox"/> OTHER (Specify)		B. <input type="checkbox"/> BENF/O <input type="checkbox"/> PHYSICAL COM. <input type="checkbox"/> FINAN. COM. <input type="checkbox"/> OTHER (Specify)			
ITEM NO. 17	CATEGORY CODE 18	FACILITY (Category description) 19			NO. OF UNITS 20	TYPE 21	UNIT OF MEAS. 22	TOTAL QUANTITY 23		COST 24		DRAWING NUMBERS 25		REMARKS 26			
27. STATEMENT OF COMPLETION: The facilities listed hereon are in accordance with maps, drawings, and specifications and change orders approved by the authorized representative of the using agency except for the deficiencies listed on the reverse side.										28. ACCEPTED BY (Signature)					DATE		
TRANSFERRED BY (Signature)						DATE				TITLE (Post Engr./Base Civ. Engr./Navy Rep.)					29. PROPERTY VOUCHER NUMBER		
TITLE (Area Engr./Base Engr./DPWO)																	

30.

CONSTRUCTION DEFICIENCIES

31. REMARKS

INSTRUCTIONS

This form has been designed and issued for use in connection with the transfer of military real property between the military departments and to or from other government agencies. It supersedes ENG Forms 290 and 290B (formerly used by the Army and Air Force) and NAVDOCKS Form 2317 (formerly used by the Navy).

Existing instructions issued by the military departments relative to the preparation of the three superseded forms are applicable to this form to the

extent that the various items and columns on the superseded forms have been retained. Additional instructions, as appropriate, will be promulgated by the military departments in connection with any new items appearing hereon.

With the issuance of this DD form, it is not intended that the departments shall revise and reprint manuals and directives simply to show the number of this DD form. Such action can be accomplished through the normal course of revision for other reasons.

INSTRUCTIONS FOR PREPARATION OF DD FORM 1354

Purpose. This table provides the procedures for completing DD Form 1354 (Transfer and Acceptance of Military Real Property) by all responsible parties.

Detailed Instructions. Only the shaded blocks to the DD Form 1354 are required to be filled in by the Contractor as follows:

1. From: This block will include the name of the transferring agency: organization, installation, division, etc. It will also include the address and zip code. This information is for those performing the work or making the transfer.

2. Operating Unit: For other than Army use.

3. District Code: For other than Army use.

4. Operating Agency: For other than Army use.

5. Date: This is the preparation date of the DD Form 1354.

6. Job Number: The job number depends on who initiates the job. If the Director of Engineering and Housing (DEH) or the Director of Public Works (DPW) initiates the job then they will put a job number in this block and it will relate to a special project (for contract) or a DA 4283 job order (in house).

7. Serial Number: This is the voucher number at source, e.g., DPW, COE.

8. Contract Number: If a project has been let to a contractor then the contract number will be that assigned by the contracting office in the Director of Contracting or the District Engineer contracting office.

9. To: This will include the name of the receiving organization, installation, division, etc. where the work has been performed or where the transfer has been made. The address and zip code will also be included.

10. Operating Unit: Other than Army Use.

11. District Code: Other than Army use.

12. Operating Agency: Other than Army Use.

13. Accounting Number: Other than Army Use.

14. Accountable Officer Number: Other than Army Use.

15. Type of Transaction: This will identify whether it is new construction, capital improvement or other. It will also indicate whether it is the final cost of the project, beneficial occupancy or physical completion. The District Engineer or in house project officer must indicate on the DD Form 1354 whether cost shown is preliminary (for Beneficial Occupancy/Physical Completion DD Forms 1354) or final cost.

If it is a preliminary (estimated cost) the real property officer will create a suspense file to ensure that the district furnishes an updated DD Form 1354 with final construction cost. Update to the database should be handled accordingly. Final costs may take several years if legal claims are involved.

Indicate whether the transaction involves new construction, transfer of existing facilities or capital improvements to existing facilities.

16. Project Number: Enter the project number and code number assigned to identify the project. For construction, enter the public law authorizing the work.

17. Item Number: Identify each entry on the DD Form 1354 by giving it an item number. Each portion of a facility with a unique DA PAM 41528 category code must be identified with a separate line number.

18. Category Code: This column will identify the five-digit design use category code associated with the design of the facility as indicated in the DA PAM 41528. Each facility may have more than one design use; however, they must be identified as separate items in block 17.

19. Facility (Category Description): The description for the facility will be entered as it relates to the category short title in the DA PAM 41528. Each facility number should be identified in this field as it relates to the construction.

20. Number of Units: Self-explanatory.

21. Type: This will indicate the type of construction: "P"
= Permanent, "T" = Temporary and "S" = Semi permanent.

22. Unit of Measure UM1, UM2: This indicates the gross area or capacity of a facility as it relates to the design use category code of the facility. See DA PAM 41528.

23. Total Quantity: This indicates the total quantity of the facility as it relates to the unit of measure assigned to the facility: e.g., UM1 = square feet (SF), acres (AC) or square yards (SY), UM2 = each (EA), families (FA), etc.

24. Cost: Cost for each line item entry must be entered.

All engineering, design and inspection costs associated with a project must also be captured on the DD Form 1354.

a. If the cost is the final cost figure for the line item it will carry an alphabetical suffix of "F" indicating that it is a final cost. If the cost is preliminary it will contain a "P" indicating it to be a preliminary cost and not final.

b. If the cost is a capital improvement to an existing facility previously accounted for, enter only the amount which will increase the cost of the real property, i.e., enter the amount by which the general ledger balance is to be increased.

c. All engineering, design and inspection costs will be entered on the DD Form 1354 for the real property office to capitalize as project costs. These will be identified as a separate entry.

Types of funds are mandatory and will be shown in column 24 or column 26 (i.e.: MCA, Housing, and NAF).

25. Drawing Number: Indicates the number assigned to a particular drawing of a construction project as it relates to the different components to a facility: the architectural drawing would be number one, the

plumbing would be number two, etc. Using the old manual system the drawing numbers would relate to each page of the project, however, now that the automated system of CADD is operational at many installations this is not the case.

26. Remarks: Self-evident. This field may be used to note any information about the drawing numbers, project number, reason for the DD Form 1354: change in unit of measure, reason for increase/decrease in cost, etc.

27. Statement of Completion: Indicates the signature/title of the individual responsible for the transfer of the facility/equipment. The date is self-explanatory, however, the date must be prior to or the same as the date of acceptance in item 28 on the 1354.

28. Accepted By: Indicates the signature/title of the individual responsible for accepting the transfer of such properties. The date is self-explanatory.

29. Property Voucher Number: This number will be assigned sequentially by the receiving real property office to indicate the voucher occurrence that the transaction was accepted/vouchered.

Example: V12390, This indicates that this is the 123rd voucher for FY 90. When an installation transfers from one to another, the losing installation fills in block 7 and the gaining block 29.

30. Construction Deficiencies: This should indicate any deficiencies of the design or construction of the project.

31. Remarks: Self-explanatory. If the "Other" box is checked in item 15 an explanation should be noted in the "Remarks" column.

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SECTION 01336

60 PERCENT DESIGN REQUIREMENTS

PART 1 60 PERCENT DESIGN SUBMITTALS

For general submittal requirements, See Section 01332 DESIGN AND CONSTRUCTION DELIVERABLES/PROCEDURES.

1.1 SITE PLANNING

1.1.1 Drawings

1.1.1.1 Location Plan and Vicinity Map

The Location Plan and Vicinity Map provided in the Request For Proposal (RFP) shall be updated as necessary and included in the drawings. The Location Plan shall include the Contractor's Access Route, Staging Area, and the Project Site.

1.1.1.2 Removal Plan

The removal plan shall show the existing physical features and condition of the site before construction. Each physical feature to be removed shall be hatched as indicated on the standard legend sheet or a legend on the removal plan, and properly noted: to be removed, to remain, or to be relocated. The Removal Plan shall be prepared at the same drawing scale and use the same sheet boundaries as the Site Plan.

1.1.1.3 Site Plan

The Site Plan shall show all the site layout information necessary to field locate the building, parking lots, roads, sidewalks, and all other appurtenances to be constructed as part of the project. All major site work to be constructed shall be dimensioned for size and location. The Site Plan shall identify all site-related items such as: curbs, pavements, walks, bollards, trash enclosures, retaining walls, chiller units, electrical transformers locations, etc. in accordance with a standard legend sheet or with additional legends or notes. Drawing scales of between 1 inch = 20 feet, and 1 inch = 30 feet are acceptable scales for the Site Plan. The Contractor shall consider the project's construction area, drawing legibility, and number of sheets required in choosing the drawing scale. The Site Plan, prior to adding the dimensions and notes, shall serve as the base sheet to other Plans, such as: Utilities Plan, Grading and Drainage Plans and Landscape Plan. Existing and proposed contours or utility lines shall not be shown on Site Plan. Physical features that will remain after the proposed construction has been completed shall be shown. This plan, or the Location Plan, shall also show any free zones, construction limits, etc. Whenever the Site Plan occupies more than one sheet of drawings, a Key Plan shall be included. Additional plans showing specific areas of the site in smaller scales can be included if more detail is necessary.

1.1.1.4 Site Details

The Contractor shall provide designs and details as necessary for site

furnishings, accessories, accessible parkings stalls and ramps, bollards, signage, striping, and any other site structure or item requiring a detail for clarity and construction accuracy.

1.1.1.5 Landscape Plan

A detailed Landscape Plan showing trees, shrubs, ground covers, seeded and sodded areas, shall be prepared by the Contractor. The Landscape Plan shall be prepared by a fully qualified, experienced professional Landscape Architect. The Contractor shall specify types of plant materials that are locally grown, commercially available and acclimated to the project environment. The Landscape Plan shall include a plant materials schedule or listing. This schedule shall include botanical names, common names, key, size and the method of transplanting. The Landscape Plan shall also show all unsurfaced ground areas disturbed by construction within the project limits with these areas shown to be seeded, sodded, or mulched as required.

1.1.1.6 Landscape Details

The Contractor shall verify the methods of planting to meet the project site/installation requirements and provide the necessary Landscape Details to perform the contract design work. Details shall reflect local practices and conditions for installation.

1.1.1.7 Drip Irrigation System and Details

The Contractor shall provide a drip irrigation system at trees and shrub planting beds, to meet the site installation requirements and shall provide the necessary system details to perform the contract design work. Details shall reflect local practices and conditions for installation.

1.1.1.8 Environmental Hazards Remediation

The Contractor shall provide drawings, details and specifications as necessary for the remediation of environmental hazards that must be removed from building demolition areas prior to actual building demolition work. Environmental hazards to be removed include asbestos, PCB's and fluorescent light tubes; see the Hazardous Materials Survey Report (Attachment 13) for description of such items.

1.1.1.9 Erosion Control Details

Provide details of best management practices to control erosion.

1.1.2 Specifications

Provide a listing by title and number of all Technical Specifications proposed for use in the final site design.

1.1.3 Design Analysis Narrative

Design analysis shall include the following:

1.1.3.1 Design References

Design references used in preparing the site design.

1.1.3.2 Basis, Specific Goals, Objectives and Priorities For Site Design

The Design Analysis shall give the basis, specific goals, objectives and priorities for site design of the project. Identify, explain and document use of design criteria and how the design meets goals, objectives and priorities. Identify the preferred site development concept. Document pollution prevention measures and other environmental considerations made during design. The 60 percent Design Analysis must be approved and accepted before Final Design.

1.1.4 Completion Required at 60% Submittal

In order to expedite the construction process, all Site Planning work under Paragraphs 1.1.1.2, 1.1.1.3, 1.1.1.8 and 1.1.1.9, including all associated specifications, design criteria, references, design calculations, etc. shall be submitted as separate package from the remainder of the work in this Section. See Section 00800 SPECIAL CONTRACT REQUIREMENTS, Paragraph 1.1.1 for additional information.

1.2 CIVIL

1.2.1 Drawings

1.2.1.1 Grading and Drainage Plan

A preliminary grading and drainage plan showing the proposed layout of all new and existing storm drains for the site. The scale shall match the site plan. Existing grading contours shall be indicated at 1 foot contour intervals. Tentative new grading contours shall be shown. Indicate proposed finished floor elevation of the new building and structures. Provide location and description of benchmarks and indicate vertical and horizontal datums.

1.2.1.2 Typical Pavement Sections

Provide typical pavement and road sections and details showing interface between new and existing pavements and new pavements of different sections.

1.2.2 Specifications

Provide a listing by title and number of all Technical Specifications proposed for use in the final civil design.

1.2.3 Design Analysis Narrative

Design analysis shall include the following:

1.2.3.1 References

Design references used in preparing the civil design.

1.2.3.2 Grading

A narrative of the grading design and criteria used.

1.2.3.3 Pavements

A narrative of the pavement design and criteria used plus design calculations used to obtain the pavement design.

1.2.3.4 Drainage

A narrative of the drainage design and criteria used. Include information on the storm drain and culvert pipe materials anticipated to be used.

1.2.3.5 Basis, Specific Goals, Objectives and Priorities For Civil Design

The Design Analysis shall give the basis for the civil design and shall establish specific goals, objectives and priorities for civil design of the project. Identify, explain and document use of design criteria and how the design meets goals, objectives and priorities. Identify the preferred site development concept. Document pollution prevention measures and other environmental considerations made during design. The 60 percent Design Analysis must be approved and accepted before Final Design.

1.2.4 Completion Required at 60% Submittal

In order to expedite the construction process, all Civil work under Paragraph 1.2.1.1, including all associated specifications, design criteria, references, design calculations, etc. shall be submitted as a separate package from the remainder of the work in this Section. See Section 00800 SPECIAL CONTRACT REQUIREMENTS, Paragraph 1.1.1 for additional information.

1.3 GEOTECHNICAL

See Structural Design Requirements.

1.4 WATER SUPPLY AND WASTEWATER

1.4.1 Drawings

1.4.1.1 Water Distribution and Sewage Collection Systems Plan (including building services)

Provide all existing utilities and above ground features which may pose as an obstacle (i.e., water, sewer, gas, electrical, etc.) on the basic site plan layout. Exclude siting notes and dimensions from the plan. Provide all proposed new water and sewer lines with preliminary sizes. This shall include all new service lines up to the 5-foot building line. Show the proposed locations of all new manholes, fire hydrants, valves (including PIV's), connection points, etc.

1.4.2 Specifications

Specifications shall be coordinated with the plans and shall include all items. Provide a listing of specifications to be provided. Provide a complete copy of special sections to cover those subjects for which no UFGS guide specifications are used or available.

1.4.3 Design Analysis Narrative

Design analysis shall include the following:

1.4.3.1 References

Provide design references used in preparing the water and wastewater design.

1.4.3.2 Water Supply and Distribution Systems

A narrative of the water supply and distribution system designs and applicable criteria used shall be provided. Include the peak and average domestic demands, the fire flow required and the available flow and residual pressures. A description of the water distribution system, a listing of allowable piping materials, hydrant flow test data and preliminary calculations necessary to support equipment, piping sizes, fire and domestic demands, etc., shall be provided.

1.4.3.3 Wastewater and Sewers

Based on existing information the sanitary sewer system in the vicinity of the proposed facility is assumed to be adequate to carry the flows expected to be generated by the new facility. A narrative of the wastewater capacity design and applicable criteria used shall be provided. Include the preliminary calculations used to design the average and peak contributing flows. Field verify the available capacity and full flow capacity of the existing system to ensure that it will be adequate for the flows generated by the new facility. Include the available capacity and full flow capacity in the design analysis. Preliminary calculations necessary to support equipment and piping sizes and a listing of allowable piping materials shall be provided.

1.4.3.4 Gas Distribution

A narrative of the gas distribution design and applicable criteria used shall be provided. Include the peak and average flow demands, the flowrate required and the available pressures. A description of the gas distribution system, a listing of allowable piping materials, test data and preliminary calculations necessary to support equipment, piping sizes, flow demands, etc., shall be provided similarly to water supply and distribution system.

1.4.3.5 Storm Water System

A narrative of the storm water system design and criteria used, including a complete and detailed Drainage Study of the contributing area shall be provided. Include the storm event calculations used to design the underground system and the ability to handle the 100-year storm event within the project site. Include the available capacity of each system and the calculations to detain storm water runoff on site if the existing system does not have the capacity to handle the developed storm. Field verify the available capacity in the design analysis. Provide all calculations necessary to support structures, inlets, detention ponds, swales, and piping sizes, along with a listing of allowable piping materials.

1.5 ARCHITECTURAL

1.5.1 Drawings

Sixty percent architectural drawing submittal shall be a complete set of architectural drawings without large scale details. All other drawings shall be complete except referencing of the large scale details.

1.5.1.1 Floor Plans

Provide a double-line Floor Plan of the entire building, drawn at the largest scale practicable to include the entire building on a single sheet. Floor plans shall essentially be complete with the exception of large scale detail referencing. Floor plans shall be scaled double-line drawings showing the functional arrangement, pocheing, location of all openings and plumbing fixtures, all section cuts, wall types, all notes and leaders, all general notes, and all dimensions. The plans shall indicate door swings, door numbers and window types; door and window schedules are required. A north arrow shall be shown on each floor plan. Enlarged toilet plans shall also be included. The plan sheet shall include a gross area tabulation comparing the actual square feet with the authorized square feet of the facility. Architect-Engineer suggestions for plan improvement shall be fully shown and justified. Include the following:

- Overall, control, and door/ window opening dimensioning.
- Match lines for combining individual portions of floor plans.
- Room names and numbers.
- Structural column or bay indicators.
- Wall and building section cuts.
- Door swings and door numbers.
- Window types.
- Area in square feet.
- General notes.

Also provide a Key Plan at a uniform location on all Floor Plan sheets which shows the interrelationships between the building portions. This key plan shall be scaled, and oriented in the same manner as the floor plan for all plan type drawings of all disciplines. When dimensioning, use arrowheads, not dots or slashes. Where major structural elements are included as parts of architectural detailing, do not indicate sizes. These elements shall all be fully defined as part of the structural design documents. Major elements of mechanical and electrical equipment affecting room size or shape shall be shown on the architectural plans to a practicable extent and coordinated with other respective disciplines. When applicable, Government-furnished, Contractor-installed, or Government-furnished and Government-installed items shall be shown as a dashed line.

1.5.1.2 Reflected Ceiling Plans

Reflected ceiling plans shall be complete including all electrical lights, mechanical supply & diffusers, notes, complete legends and pocheing of all materials to be used. See paragraph on Drawing Scales for reflected ceiling plan scale requirements.

1.5.1.3 Roof Plan

Roof plans shall be complete, including all notes, legends, slope indications, gutter and downspout locations, and roof overflow drains. All elements located on the roof shall be coordinated with all disciplines. See paragraph on Drawing Scales for roof plan scale requirements.

1.5.1.4 Building Elevations

Provide all building elevations complete showing the appearance and architectural treatment. Elevations shall be dimensioned to show total height and relation to grade. Critical elevations such as top of finish floor, top of steel, etc. shall be indicated. All notes for materials shall be included. See paragraph on Drawing Scales for Exterior Building Elevation

scale requirements.

1.5.1.5 Building Sections

Building cross section and longitudinal sections shall be included to show general interior volumes, construction methods, and height of ceilings and partitions. Identify materials used and necessary dimensions. See paragraph on Drawing Scales for Building Section scale requirements.

1.5.1.6 Wall Sections

Drawings shall include all wall sections and stair section conditions including corridors, showing vertical control elevations and dimensions, with all materials labeled. The sections should normally be cut through doors, windows, and other critical wall section locations. Wall sections shall not be broken. Additional details shall be included when necessary to illustrate important or unusual features. All horizontal dimensions shall occur on the plans and vertical dimensions on the sections and elevations. See paragraph on Drawing Scales for Wall Section scale requirements.

1.5.1.7 Room Finish Schedules

Room finish schedule shall be complete in accordance with Corps of Engineers (COE) standard format.

1.5.1.8 Door, Window, and Louver Schedules

Door schedule shall be complete in accordance with Corps of Engineers (COE) standard format. Schedule shall include door and frame types, except referencing to door details and hardware sets. Window and louver schedules shall be complete including window and louver types, except referencing to details.

1.5.1.9 Fire Ratings

Wall ratings, and fire hazards shall be clearly indicated as required by Fire Protection criteria. Wall fire ratings shall be graphically shown by a continuous symbol or pocheing within the wall on a Fire Protection /Life Safety Plan. When other functions coexist with the fire protection functions, their integration shall be clearly indicated, with an analysis that describes how both functions will be served. Provide a separate, composite type floor plan which makes an accurate presentation of these various features and functions.

1.5.1.10 Drawing Scales

Architectural work shall be drawn at the scales listed below. Other scales may be used only by written authorization through the Technical Manager, Omaha District. Units of measurements shown on the drawings shall be done in English units. All disciplines shall use the same scale for plan sheets. The following is a comparison guide to establish equivalent scaling of drawings:

	ENGLISH
Floor Plans	1/4"=1'-0"
Reflected Ceiling Plans	1/4"=1'-0"
Detail Plans (Note 1)	1/2"=1'-0"
Roof Plans	1/4"=1'-0"

Exterior Elevations	Same scale as plan
Interior Elevations	1/2"=1'-0" min.
Interior Toilet Elevations	1/2"=1'-0"
Building Cross Sections	1/4"=1'-0"
Wall Sections (Note 1)	3/4"=1'-0"
Details (Note 1)	1/2"=1'-0" min.
Wall Types	1-1/2"=1'-0"
Foundation Plans	1/4"=1'-0"
Framing Plans	1/4"=1'-0"
Fire Protection Plans (Note 1)	Varies

Notes:

1. The goal of this requirement is that the details be large enough to show all fixtures, accessories, equipment, materials, manner of construction, clearances required for proper maintenance, and complete dimensions. Toilet rooms and Equipment rooms are examples of the kind of spaces which shall be drawn as a Detail Plan.

1.5.1.11 Legends

Standard architectural material symbols used on the drawings shall be provided as a separate architectural legend drawing located just in front of the architectural drawings in the set. Additional material symbols shall be added to the Legend Sheet as needed for the project.

1.5.1.12 North Arrows

North arrows shall be oriented the same direction on all plan sheets and by all disciplines, including site and civil drawings. Plan north shall be "up" or to the left on the drawings. Indicate true north on composite plan drawings. North arrows shall be located approximately at the same location on all sheets.

1.5.1.13 Modular Design

Modular Design practices shall be followed in the design of all masonry buildings or components of buildings. Dimensions shall be figured to whole or half-unit lengths of standard units in order to reduce on-site cutting of masonry.

1.5.1.14 Symbols

The Room and Door Numbering system shall be consistent. The standard symbols for Amendments (a triangular box) or Modifications (a type of circular box, see the chapter on Drafting Criteria) to the contract shall not be used for any other purpose, and care must be taken to avoid using even similar appearing but technically different symbols. Room numbering shall start at the main entrance and proceed clockwise around functional areas.

1.5.1.15 Schedules

Schedules for room finish, doors, windows, louvers, etc., shall be clear and complete. As many columns as necessary shall be provided in order to present the essential information. The "Remarks" column shall not be used as a substitute for an information column. Normally a single item should be presented on each schedule line. Other scheduling methods as standard

with the A-E may be used if approved by written authorization from the Project Architect, Omaha District.

1.5.1.16 Notes

Notes may be placed on drawings to reduce the amount of repetitive drafting, provided that clarity is not lost. General notes shall be placed at the right-hand edge of the sheet and, if possible, should be located on the first sheet in the set. Notes that pertain to each drawing however, shall be placed on each drawing.

1.5.1.17 Dimensions

Dimensions must be complete, accurate and fully coordinated. Dimensions shall be to points easily measurable in the construction, and shall be laid out to eliminate refiguring in the field. Dimensions shall be tied-in to column lines, etc., to facilitate checking. Plan dimensions for frame construction shall be to face of stud (or sheathing) for exterior walls, to one face of stud for interior partitions, and to centerline of openings. For masonry construction, dimensions shall be to one or both nominal faces of masonry and to jambs of openings.

1.5.1.18 Facility Elevation

The level of finished floor shall be indicated as EL.= 100'-0". Elevations for footings, etc., shall be related to this figure. Sea level elevations shall not be shown on the building drawings.

1.5.1.19 Access to Utilities

All utilities within the building, such as piping, ductwork, electrical work, etc., shall be concealed in finished areas. Provide plumbing chases in toilet areas. The clear space above ceilings and the size of chases must be carefully figured to accommodate piping slopes and connections, ductwork crossovers, and similar situations. Access must be provided to valves, cleanouts, etc. Space provided for utilities systems must be adequate but should not be excessive.

1.5.1.20 Reflected Ceiling Plans

Reflected Ceiling Plans shall be provided for all spaces in the building. Reflected ceiling plans shall show the ceiling tile layout and location of gypsum wallboard and other ceiling types, where applicable. All light fixtures, air diffusers, grilles, registers, PA speakers, sprinkler head layout, smoke and heat detectors (if ceiling mounted), and other ceiling mounted items shall also be shown on the reflected ceiling plans. The fixtures and other equipment shall be laid out in a regular pattern symmetrical with the ceiling tile grid, or symmetrical with the room centerlines, columns, windows, or other feature that dominates. All ceiling mounted items shown shall be fully coordinated with all other disciplines.

1.5.1.21 Sketches

All sketches presented during the design phase shall be reduced to 8-1/2" by 11" and included in this design analysis to document the design options and decisions evaluated during the design process.

1.5.2 Technical Specifications

1.5.2.1 Use of Technical Guide Specifications

Technical Guide Specifications are prepared by the Corps of Engineers to achieve the maximum uniformity in contract specifications. The technical guide specifications describe the type and quality of material and installation normally acceptable for Corps construction, and often represent specific agreement between the Corps and the applicable industry. The provisions of the technical guide specifications shall not be changed without justification. The 60% submittal shall include a draft edited specification of all the applicable sections. Items added or deleted in these specification sections shall be evident. Complete descriptions including specific size, gauge, and configuration are included in the technical Guide Specifications for a wide variety of items. The designer must be familiar with the technical Guide Specification requirements in order to provide details fully coordinated with the technical specification descriptions. Terminology used on the drawings shall be the same as used in the Technical Guide Specifications. Where it is desirable to detail a variance with the standard provisions of the Technical Guide Specifications, the specifications must be revised to coordinate with the details. In addition to the guidance in SECTION 01332 on editing technical specifications, data and sample submittals for all interior and exterior finishes shall be "G-AE" submittals.

a. New Guide Specifications

New guide specifications shall be limited to those specialty type items not covered in the regular sections of Technical Guide Specifications.

1.5.3 Design Analysis Narrative

The Design Analysis shall be essentially complete with emphasis on the following:

1.5.3.1 Basic Criteria Statement

A statement indicating the basic criteria to be applied to the design including type of construction (non-combustible, etc.), category of construction (permanent, etc.), major fire protection and exiting requirements, etc..

1.5.3.2 Description of Materials

A description of materials for all major building components and of all interior and exterior finishes ascertaining their matching of existing. The description of materials must include type of exterior wall construction, room finish schedule, window types, panel materials, etc. The description of materials shall follow the continuity of Military Handbook 1190. The description of finishes may be presented in schedule form.

1.5.3.3 Additional Criteria/Clarification

A list of items on which additional criteria, clarification, or guidance is required.

1.5.3.4 Reason for Selection

The written presentation must include the designer's reasons for selecting

specific materials, architectural compatibility, and architectural treatment in all cases in which the reason for selection is not obvious.

1.5.3.5 Site Adaptation of Standard Drawings

Site adaptation of standard drawings shall include the following in the design analysis.

- a. An outline of the selections made where the standards permit the designer a choice of design or material.
- b. An outline of items on the standard that do not conform to current criteria or to the design instructions, and suggested methods for changing the standards.
- c. An outline of errors found in the standards and suggested methods for correction.
- d. An outline of improvements the designer feels should be made to the standards, with full explanation and justification.

1.5.3.6 General Parameters

The design analysis shall follow the format described herein.

- a. The purposes, overall functions, and total capacities of the facility.
- b. The design theme or visual appearance of the exterior and interiors of the building, and how this facility coordinates with the image criteria of the installation on which it will be constructed.
- c. The number of personnel to use facility.
- d. The type of activities and equipment involved.
- e. The anticipated life of the functions to be accommodated.
- f. The category of construction; permanent.

1.5.3.7 Functional and Technical Requirements

- a. Functional areas, occupant capacities, and allocation, including a functional relationship matrix.
- b. All items of equipment required.
- c. Occupational safety and health.
- d. Handicapped accessibility.
- e. Energy conservation energy budget goals.
- f. Sound and vibration control.
- g. Interior service areas.
- h. Physical security; lock and keying, intrusion-detection, alarms,

restricted access areas, interior guard support, and ties to local authorities.

- i. Justification for selection of exterior and interior finishes and materials.
- j. Moisture vapor control.
- k. Lessons learned incorporated into the design.

1.5.3.8 Design Objectives and Provisions

- a. Adaptation of the building to the size, shape, and orientation of the site.
- b. Building layout to establish convenient circulation flows during normal operation and emergency evacuation activities for materials, equipment, services, and people.
- c. Grouping spaces into sound-compatible zones and protective construction zones, e.g., for fire and storm.
- d. Space layout compatible with modular (structural and environmental) support systems.
- e. Type of construction materials, architectural systems, and finishes.
- f. Building expandability/changeability.
- g. Physical security.
- h. Barrier-free design.
- i. Energy conservation (insulation, orientation).
- j. Acoustical design.
- k. Moisture vapor condensation design.
- l. Composition of masses and spaces architectural compatibility and architectural details to reflect the design theme and desired image, and the scale and nature of the activities involved.
- m. Perception of the building details and volumes. (Specific provisions made, e.g., an identifiable sequence of viewing positions for experiencing the interior and exterior architectural design.)
- n. Enhancement of materials and systems maintenance and operation.
- o. Economy of building construction, operation, and maintenance: life-cycle cost effectiveness.

1.5.3.9 Coordination with Installation or Outside Agencies

- a. Physical security support.
- b. Occupational safety and health, as required.

- c. Government furnished equipment.
- d. Operations and maintenance support.

1.5.3.10 Checklists

Fire Protection Code Analysis and Handicapped Checklist shall be included in the Design Analysis. See Attachments 1 and 2.

1.5.4 Design Analysis Calculations

- a. Net room areas, occupant capacity and gross building areas.

(Categorize areas and capacities under the titles of "Operational Space Requirements", "Administrative Space Requirements", "Storage Space Requirements", and "Support Space Requirements".)
- b. U-values for each wall, window, door, or roof type studied or selected.
- c. Acoustics.
- d. Rainfall intensity relative to roof area and roof drain size and number calculations.

1.6 INTERIORS

1.6.1 Design Analysis/Narrative

The design analysis shall contain an explanation of the desired image or visual appearance of the interior of the facility and the design intent.

1.6.2 Drawings

1.6.2.1 Furniture Footprint

A furniture footprint indicating proposed furniture layout shall be incorporated into the drawings.

1.6.3 Technical Specifications

Appropriate UFGS guide specifications shall be provided and coordinated with the drawings and design analysis. Specifications shall be edited to identify proposed product and installation requirements. Where materials or installation requirements are not covered in the provided specifications, information shall be prepared to cover these items. In addition to guidance provided in SECTION 01332 on editing technical specifications, data and sample submittals for all interior and exterior finishes (including but not limited to interior design and architectural specifications) shall be "G-AE" submittals.

1.6.4 Color Boards and Legends

Color boards shall show actual color samples of all proposed exterior and interior finishes. A color board legend shall accompany the boards and shall clearly identify all finishes. Clarification of finish placement shall be required when more than one color of a single finish is proposed.

Color boards shall be 8 1/2" x 11" in size and provided in a three ring binder. Include project name and location, design stage and date on the front cover and spine of the binder.

1.7 STRUCTURAL

1.7.1 Drawings

Drawings shall include roof framing plans, floor slab plans and foundation plans. Roof framing plans shall show sufficient details to clearly indicate the type of framing system used, size and spacing of members, and their elevations. The location of all columns or pilasters shall be shown, and all building structural members shall be at least outlined. The sizes, locations and elevations of footings shall be shown. Slab plans shall be coordinated with the Architectural sheets and shall indicate the locations of structural walls and masonry partitions, recessed slabs and contraction or construction joints. Concrete slab-on-grade thicknesses and sections shall be shown. Proposed treatment of unique or complex features and details shall be shown on the drawings. Elevation views, sections and details necessary to illustrate the design at a 60% level of completion shall be provided. Drawings shall also include overall building plan dimensions, north arrows, and design notes. Drawings shall be at done at a scale appropriate for the design, in no case however, shall plan type drawings be done at a scale smaller than 1/4" = 1'-0" or detail type drawings at a scale smaller than 3/4" = 1'-0".

1.7.2 Specifications

For this 60% design submittal the Contractor shall provide a listing by title and number of all Technical Specifications proposed for use in the final structural design.

1.7.3 Design Analysis

Design analysis shall follow the format described in Section 01332 DESIGN AND CONSTRUCTION DELIVERABLES/PROCEDURES, Paragraph 3.3, "Design Analyses", and the specific content shall be essentially as outlined below.

1.7.3.1 Design Criteria and References

A list of design criteria references, such as Department of the Army Technical Manuals and Technical Instructions, ACI Standards, AISC Specifications, etc., and any other references which were used in the design of the project shall be included in the narrative.

1.7.3.2 Design Loads and Conditions

A list of structural design loads and conditions shall be provided, including:

- Snow load parameters;
- Wind load parameters
- Seismic design parameters;
- Roof live loads;
- Floor live loads, identifying each loading with usage and the room or space where used;
- Foundation design criteria, including the design depth for footings, allowable soil bearing pressure, equivalent fluid densities (or lateral earth pressure coefficients) for the design of

earth-retaining structures and building components, modulus of subgrade reaction, and any other pertinent data derived from the recommendations of the Geotechnical Engineering Report (Attachment 15) and the Geotechnical Engineering Letter (Attachment 16), copies of which shall be included as an Appendix to the Design Analysis.

1.7.3.3 Structural Materials

A list of structural materials shall be provided, together with the stress grades and/or ASTM designations, as applicable, for structural steel, concrete, and reinforcing steel; the series for steel joists; and identification of the proposed use of each material in the structure.

1.7.3.4 Availability of Precast Concrete Units

Where precast concrete units of particular cross section(s) and concrete strength are a part of the structural design, verification of their availability from precast producers in the project vicinity shall be documented. Acceptable documentation consists of letters from the producers or a written statement by the Contractor identifying the name and address of the precaster(s), description of units and concrete strength(s) available, date when availability was verified, and name of Contractor's staff member who obtained the verification.

1.7.3.5 Description of the Structural System

A concise description of the proposed structural system for the building, together with the reasons for its selection, shall be provided. All principal elements of the structural system selected shall be described. Typically, these shall include:

- Primary supporting members for the roof;
- Masonry walls, type of material, and whether load bearing or non-load bearing, with location of load-bearing walls defined, and measures taken to compensate for expansion/contraction and crack control in masonry walls;
- The proposed system for resisting lateral forces (wind and earthquake) and transferring them to the ground, whether diaphragms, chord bracing, shear walls, braced or moment resisting frame, etc;
- Foundations, description of special designs to accommodate existing site conditions;
- Concrete slab-on-grade floors, description of floor surface finish treatment, accommodation of live loads, and the use, location and types of crack control joints;
- The proposed treatment of any unusual structural loadings, features or unique solutions to structural problems.
- Identification of any major vibrating elements and measures taken to isolate them.

1.7.4 Design Analysis Calculations

The extent of the structural calculations shall be indicative of a design which has reached a 60% level of completion. Computations shall include snow, wind, seismic, dead and live loads. Computations shall show sizing and spacing of structural members for roof framing, sidewalls and foundation sizes, as appropriate to the systems to be used for these elements.

1.7.5 Completion Required at 60% Submittal

In order to expedite the construction process, the foundation plan, along with all associated details, specifications, design criteria, references, design calculations, etc. shall be submitted as a separate package from the remainder of the work in this Section. See Section 00800 SPECIAL CONTRACT REQUIREMENTS, Paragraph 1.1.1 for additional information.

1.8 MECHANICAL

Compliance with the design requirements for the building mechanical systems will be determined by a review of the submitted 60 percent drawings, design analysis, and specifications. Any conflicts in the design requirements or lack of thorough understanding of the nature and scope of work shall be identified and resolved prior to submittal of the 60 percent design.

1.8.1 Design Drawings

The 60 percent design drawings shall be fully coordinated with the design analysis. Provide sufficient plans, piping diagrams, sections, air & water flow diagrams, details, schedules, and control diagrams/sequences of operations etc. as necessary to define the required design intent. Floor plans shall use the architectural floor plans as a basis, with the building outline half-toned. Unless otherwise indicated, all floor plans shall be drawn at a scale similar to architectural drawings and show all room names and numbers. Coordinate with architecture design for provisions of access panels for all concealed valves, traps, fire dampers, air vents etc. Coordinate with architectural design so that louvers shown on architectural drawings match damper sizes for the respective openings. Sheet reference number sequencing shall be in accordance with the Omaha District CADD Standards Manual. Submittal drawings shall include, but not limited to, the following:

1.8.1.1 Mechanical Index Sheet

An index sheet identifying all mechanical drawings shall be provided, including those drawings anticipated to be provided in the 100 percent design submittal. Index shall include drawing design file numbers, drawing numbers, sheet numbers, and drawing descriptions.

1.8.1.2 Mechanical Abbreviation, Legend, and General Notes Sheet

This sheet shall include all mechanical abbreviations and symbols that will be used on the drawings. Symbols shall be grouped into sections; as a minimum, provide sections for Plumbing, Heating, Miscellaneous Piping, Valves and Fittings, and Air Distribution.

1.8.1.3 Exterior Utility Drawings

The following exterior utility drawings shall be provided:

a. Removal Plan

All existing exterior mechanical utilities and utilities which are to be removed shall be indicated on the Site Removal Plan located in the civil section of the drawing package.

b. Utility Plan:

All existing and new mechanical utilities shall be indicated on the Site Composite Utilities Plan located in the civil section of the drawing package. The location of existing exterior utilities shall be thoroughly checked and indicated on plans and profiles, thus preventing interference with new services. The utility drawing shall indicate all new utilities, including tie-in points, and existing utilities which are to be abandoned.

1.8.1.4 Plumbing Drawings

The following plumbing drawings shall be provided:

a. Plumbing Plans

Plumbing plans showing the design and tentative layout of the domestic hot and cold water distribution systems; make-up water piping; soil, waste and vent piping; and storm water drainage system shall be provided. Plans shall show all anticipated routing of piping systems from the connections within the structure to a point five feet outside the structure. The grade of all drain lines shall be calculated and invert elevations established. All electrical panels/equipment and pertinent HVAC equipment (expansion tanks, boilers, AHU's, pumps, lawn sprinkler system, etc.) shall be outlined in half-tone on the plumbing plans. Plans may combine building areas and be drawn at 1/8" = 1'-0" scale as long as legibility is not compromised. Plumbing fixtures and drains shown on the drawings shall be designated by the same identification system used in the Technical Specification and Plumbing Fixture Schedule.

1.8.1.5 Mechanical HVAC Drawings

Show on mechanical HVAC drawings all items of mechanical equipment, including boiler room equipment, HVAC equipment layout, air handling units, air distribution and exhaust systems, etc., to determine proper space allocation within the intent of the architectural layout requirements. Plans, elevations, and sections shall be developed sufficiently to insure that major equipment items, piping, and ductwork cause no interference with structural members, electrical equipment, etc. The following HVAC drawings shall be provided:

a. Mechanical HVAC Plans

Mechanical HVAC plans showing the design and tentative layout of the hot water piping distribution system and equipment, the air supply and distribution systems, and the ventilation and exhaust systems shall be provided. Air supply and distribution systems shall show all ductwork, including supply and return ductwork, ductwork to diffusers and grilles, and all diffusers and grilles. Ductwork may be shown as single-lined. All electrical panels/equipment and pertinent plumbing equipment shall be outlined in half-tone on the HVAC plans.

b. Enlarged Mechanical Room HVAC Plans

Enlarged mechanical room HVAC plans showing all mechanical systems and drawn at a minimum 1/4" = 1'-0" scale shall be provided. Plans shall show layout of all equipment, piping, and ducts located within the rooms. Equipment shall include (but not

limited to) air handling units with associated outside air intakes, relief air, and supply/return ducts; exhaust/supply fans, mechanical room ventilation intake/relief openings, gas service entrance, combustion air opening, unit heaters, pumps, boilers, expansion tanks, water treatment and temperature control panels. Plans shall show dedicated access space for items requiring maintenance. In addition to all the mechanical HVAC systems required, the plan shall show half-toned outlines of all major plumbing equipment, the water service entrance, fire protection entrance and riser, lawn sprinkler apparatus, and any electrical equipment or panels located in the room.

c. Mechanical Room Sections:

For each air handling unit within the mechanical room, a mechanical room section view shall be provided showing, but not limited to, all AHU components, ductwork connections/routing, and relationship to adjacent structural features.

d. Airflow Diagrams:

Airflow diagrams shall be provided for each Air Handling Unit system showing CFM quantities for outside air, return air, and supply air. Supply-air side of each diagram shall be broken down into zones, with each zones supply return, and relief/exhaust CFM quantities identified.

e. Mechanical Schedule Sheets

Schedules, with preliminary capacities, shall be provided for each item of mechanical equipment. Furnished typical equipment schedules shall be used whenever possible and shall be revised and completed as necessary to suit the project requirements. In addition to the equipment schedules, damper and control valve schedules shall also be provided.

1.8.1.6 HVAC Control Drawings

Simplified, one-line type control schematics showing all control system interface points and detailed sequence of operation shall be provided for all mechanical equipment and systems. Sequence of operation for each item of equipment and system shall be sub-sectioned into paragraphs describing discreet operational requirements. See Section 01006 for specific DDC control system requirements. The following drawings shall be provided:

a. HVAC Controls Legend

This sheet shall include all control abbreviations and symbols that will be used on the drawings. Furnished Controls Legend sheet shall be used as a basis for all abbreviations and symbols used on the Final Control Drawings.

b. Misc Systems

These sheets shall include all miscellaneous equipment items such as supply/exhaust fans, unit heaters, controls air compressor, etc. that are not interlocked to the main HW or air handling unit systems. Provide control schematic and sequence of control for

each item of equipment on the same sheet.

c. Hot Water System

Provide a boiler and pumping system control schematic and sequence of operation.

d. Air Conditioning System

Provide a condensing unit and evaporator system control schematic and sequence of operation. Include all items of equipment that are interlocked to each system.

d. Air Handling Systems

For each air handling system, including outside air makeup system, provide a control schematic and a sequence of operation. Include all items of equipment that are interlocked to each system.

e. Control Points Lists

Provide Local Control Panel control points lists for all items of equipment and systems, identifying all anticipated temperature control system input/output points. The format for defining the input/output points shall be as identified on the furnished Example Control Point List sheets.

1.8.2 Technical Specifications

Government provided (UFGS) technical guide specifications (available to the Design-Build Contractor) are not required to be edited at this design stage, but a listing of the guide specifications intended for editing shall be included as part of the Design Analysis.

1.8.3 Design Analysis Narrative

The narrative portion of the design analysis shall contain a narrative description and analysis for each of the mechanical portions of the design. The basis and reasons for specific engineering decisions, special features, unusual requirements, etc., shall be explained or summarized as applicable. If it is necessary to deviate from criteria or standard practice, reasons shall also be included. Design statements shall be provided in sufficient detail to enable the reviewer to get a clear picture and understanding of all included work so that approval will be granted. Narrative shall be complete relative to scope and intended design approaches. The total scope projected to final design shall be outlined in a form that will be conveniently adapted, expanded, and detailed at the final design stage. If alternatives were to be evaluated and selected by the designer, findings (pros and cons) and conclusions shall be included. The design analysis shall carry a complete narrative for every item and system covered in the design, and shall include, but not be limited to, the following:

1.8.3.1 Index

Provide a design analysis index identifying all main and sub-paragraph headings.

1.8.3.2 Project Summary

Provide a brief description of the mechanical design objectives.

1.8.3.3 Applicable Criteria

A list of all applicable criteria used for basis of design.

1.8.3.4 Technical Specifications

A list of all Guide Specifications that will be edited for the Final Design of the project.

1.8.3.5 Design Conditions

A list of Mechanical HVAC design conditions including elevation, latitude, heating/cooling degree days, winter and summer outside design temperatures, inside design temperatures for all spaces, ventilation rates, etc. shall be provided.

1.8.3.6 System Descriptions

Provide a complete description of all building systems; include the designer's reasons for selecting specific materials, systems, etc. in which the reason for selection is not obvious. System descriptions shall be include, but not limited to, the following:

- Plumbing System
- Interior Gas Piping System
- Hot Water Heating System
- Exhaust Hoods
- Air Supply and Distribution Systems
- Ventilation and Exhaust Systems
- Temperature Control System
- Seismic Protection
- Refrigeration System

1.8.4 Design Analysis Calculations

The Design Analysis calculations shall provide an estimate of the heating, cooling, and ventilation loads to determine a preliminary selection of the type and size of mechanical equipment to be used. Design calculations shall be provided in sufficient detail to enable the reviewer to get a clear understanding of all work to allow approval. Backup data shall be furnished to support basic design decisions related to sizing of major equipment and materials, performance of specific systems or equipment. Manufacturer's catalog data sheets shall be provided for each item of equipment selected. Calculations may be performed by manual or computerized procedures. Use of standardized charts, curves, tables, graphs will generally be acceptable for portions of required calculations in lieu of specific calculation procedures. Such data must be from a recognized source which is identified in the Design Analysis and shall be included with the calculations. Design calculations and computations (including Energy Budget Analysis) shall be provided for all systems and shall include, but not limited to, the following:

1.8.4.1 Index

Provide a design analysis index identifying all calculation items.

1.8.4.2 Design Conditions

A list of Mechanical HVAC design conditions including elevation, latitude, heating/cooling degree days, winter and summer outside design temperatures, inside design temperatures for all spaces, ventilation rates, etc. shall be provided.

1.8.4.3 Zone Air-Conditioning Loads

Preliminary cooling calculations shall be prepared using the Cooling Load Temperature Differential/Cooling Load Factors (CLTD/CLF) Method as described in the ASHRAE Handbook Fundamentals.

1.8.4.4 Block Air-Conditioning Loads

Preliminary block cooling load calculations, encompassing the air-conditioned areas, shall be prepared using the CLTD/CLF Method.

1.8.4.5 Psychometric Charts

A psychometric plot, corrected for site elevation, shall be provided for each of the air handling units. All points in the conditioning process (outside air, return air, mixed air, coil leaving condition, and fan temperature rise) shall be clearly identified on the psychometric chart and verification of both sensible, latent, and total capacity shall be shown using the appropriate data from the chart.

1.8.4.6 Heating Loss Calculations

For each area or room requiring heat.

1.8.4.7 Heating Loss Summary

A tabular summary of all heating load calculations for each area or room.

1.8.4.8 Boiler Selection

Include boiler capacity adjustments for altitude, inefficiency, and net rating. Provide catalog data indicating input capacity, net output capacity, dimensions, and water and flue size connections.

1.8.4.9 Hot Water Pump Selection

Include pump flow calculations and catalog selection data indicating dimensions, connection sizes, rpm, horsepower, and efficiency.

1.8.4.10 Combustion-Air Requirements

Include combustion air calculations based upon rated input for gas fired equipment.

1.8.4.11 Unit Heater Selections

For each area requiring a unit heater, provide data on capacity, weight, and horsepower.

1.8.4.12 Mechanical Ventilation

For each area or room requiring mechanical ventilation for cooling; provide

calculations similar to zone air-conditioning, louver selection, and catalog fan data.

1.8.4.13 Toilets/Janitor Room Ventilation

Provide calculations, catalog fan data, and louver selections, for each toilet area.

1.8.4.14 Air Handling Units

A tabular summary of all airflow calculations for each area or room shall be provided on each air distribution system for fan sizing summary.

1.8.4.15 Domestic Water Demand

Calculations for determining the size of the domestic cold water supply line to the building shall be provided.

1.8.4.16 Domestic Hot Water Demand

The design guidance provided for service water heating in ASHRAE Handbook HVAC Systems and Applications shall be followed to determine the domestic hot water demand for the facility. Provide catalog data for the domestic water heaters.

1.8.4.17 Roof Drainage System

Provide calculations for determining the size of the piping for the roof drainage system.

1.8.4.18 Electrical Load Summary

A summary of all mechanical equipment and the associated electrical load requirements shall be provided.

1.8.4.19 Additional Calculations To Be Provided

- Pipe sizing calculations for the HW & gas piping systems
- HW pump head calculations
- HW expansion tank sizing
- External static pressure calculations for all fans
- Duct sizing calculations for all supply, return, and exhaust systems
- Control valve Cv calculations

1.8.5 Energy Conservation

Mechanical designs shall be economical, maintainable and energy conservative with full consideration given to the functional requirements and planned life of the facility. Emphasis shall be given to heat reclamation, outside air usage and other energy conservation measures for mechanical systems. Each major item of proposed mechanical equipment shall have a net efficiency rating that is equal to or exceeds the net efficiency ratings of similar or equal equipment of the four manufacturers each having one of the four highest ratings.

1.8.6 Air Pollution Control

Air pollution control shall be incorporated in all designs. The Architect-Engineer shall investigate the latest Local, State, and Federal

regulations and standards, analyze and report on requirements in the design analysis, and include in the design as applicable. The most stringent of all regulations and standards shall be implemented into the design. If in doubt as to requirements, contact this office for assistance.

1.8.7 Energy Analysis Narrative

The narrative portion of the energy analysis shall contain a narrative description and analysis for each of the mechanical portions of the design used to simulate the building systems. Energy analysis shall not be limited to mechanical systems, but, shall include building envelope, glazing, shading, electrical systems, as indicated in paragraph ENERGY USE BUDGET COMPLIANCE (EUB) CHECK in Section 01006. The basis and reasons for specific engineering decisions, special features, unusual requirements, etc., shall be explained or summarized as applicable. If it is necessary to deviate from criteria or standard practice, reasons shall also be included. The total scope projected to final design shall be outlined in a form that will be conveniently adapted, expanded, and detailed at the final design stage. If alternatives were to be evaluated and selected by the designer, findings (pros and cons) and conclusions shall be included. The design analysis shall carry a complete narrative (including Energy Budget Analysis) for every item and system covered in the design, see Section 01006 paragraph ENERGY USE BUDGET COMPLIANCE (EUB) CHECK, and shall include, but not be limited to, the following:

1.8.7.1 Index

Provide a mechanical energy analysis index identifying all main and sub-paragraph headings.

1.8.7.2 Project Summary

Provide a brief description of the mechanical design systems simulated.

1.8.7.3 Applicable Criteria

A list of all applicable criteria used for basis of design.

1.8.7.4 Design Conditions

A list of Mechanical HVAC design conditions including elevation, latitude, heating/cooling degree days, winter and summer outside design temperatures, inside design temperatures for all spaces, ventilation rates, etc. shall be provided.

1.8.7.5 Life Cycle Cost Analysis (LCCA) (Where Required)

The narrative portion of the life cycle cost analysis shall contain a narrative description and analysis for each of the mechanical portions of the design required to be compared for LCCA including but not limited to mechanical systems, shading, glazing, lighting, and other features of the building. The basis and reasons for specific engineering decisions, special features, unusual requirements, etc., shall be explained or summarized as applicable. If it is necessary to deviate from criteria or standard practice, reasons shall also be included. The total scope projected to final design shall be outlined in a form that will be conveniently adapted, expanded, and detailed at the final design stage. If alternatives were to be evaluated and selected by the designer, findings (pros and cons) and conclusions shall be included. The analysis shall

carry a complete narrative (including LCCA analysis) for every item and system required, and shall include, but not be limited to, the following:

1.8.7.6 Index

Provide a life cycle cost analysis index identifying all main and sub-paragraph headings.

1.8.7.7 Project Summary

Provide a brief description of the mechanical design LCCA systems required.

1.8.7.8 Applicable Criteria

A list of all applicable criteria used for basis of design.

1.9 ELECTRICAL

1.9.1 Drawings

Drawing scale shall match architectural drawing requirements. Drawings shall show the following:

1.9.1.1 Lighting Layout and List of Fixtures

Complete lighting layout of all areas shall be provided. The type of fixture shall be indicated on the drawing. Complete list of fixtures proposed with type of lamp and wattage.

1.9.1.2 Receptacle Layout

Complete receptacle layout shall be provided for all areas to indicate project requirements.

1.9.1.3 Power Equipment and Layout

Power equipment and layout such as switchgear, panelboards, large motor driven items, etc.

1.9.1.4 Power One Line Diagram

Power one line diagram shall be shown to indicate arrangement of the system. One line shall cover primary and secondary power distribution.

1.9.1.5 Communications

Communications (telephone, public address) shall be shown sufficiently to indicate the designers understanding of the Section 01007 ELECTRICAL REQUIREMENTS. Provide details of TTB and rack layout. Provide cable tray layout. Provide detailed riser diagrams for P.A., Voice, Data and CATV. Provide mounting details, etc.

1.9.1.6 Fire Detection

Fire Detection drawings shall be provided and inserted in the Fire Protection/Fire Suppression F-Series of drawings.

1.9.1.7 Miscellaneous Details of Special Equipment

Miscellaneous details of special equipment to indicate understanding of 01007 ELECTRICAL REQUIREMENTS.

1.9.1.8 Lightning Protection System

Roof plan showing all conductors, air terminals, equipment bonds, etc. Details showing down conductors, air terminal mounting, bonding, conductor routing, etc.

1.9.1.9 Grounding Plan

Plan showing entire EES, ground rod locations, inspection wells, ground bars, bonding, etc. Details showing conductor burial, ground rod installation etc.

1.9.1.10 Site Plan

Plan showing all conduit, manholes switches, transformers, etc. for primary and second power, communications, and lighting. Provide details of manholes, vaults, pole bases, duct banks, equipment pads, grounding.

1.9.2 Specifications

Submit prescriptive specification sections to specify the quality, characteristics, installation procedures and testing requirements for all items of the proposed electrical design.

Specifications shall be provided (to approximately 60 percent completion). See Section 01332 DESIGN AND CONSTRUCTION DELIVERABLES/PROCEDURES, paragraph 3.2, SPECIFICATIONS for additional requirements.

1.9.3 Design Analysis Narrative

The design analysis shall contain a description and analysis of the electrical portions of the design. Special features, unusual requirements, etc., shall be noted. Narrative must address all technical requirements identified in Section 01007 ELECTRICAL REQUIREMENTS.

1.9.4 Design Analysis Calculations

Backup data shall be furnished to support basic design decisions related to sizing of major equipment and materials. As a minimum the following shall be submitted.

1.9.4.1 Service

Sizing of building services EMD (Estimated Maximum Demand) for all the building loads.

1.9.4.2 Transformers

Sizing of general purpose dry type transformers.

1.9.4.3 Feeders

Sizing of main feeders.

1.9.4.4 Panelboards

Sizing of panelboards and distribution equipment.

1.9.4.5 Illumination Calculations

Data shall identify target and calculated illumination levels for all typical rooms. Calculations shall be adjusted to compensate for special applications such as irregularly shaped rooms, open sides, ceiling obstructions (beams, ductwork), corridors, etc. If the lumen method is used for corridor calculations, the calculations shall be performed using a module in which the length doesn't exceed 3 times the width (2:1 ratio preferred).

1.9.4.6 Short Circuit Evaluation

The maximum possible fault current at the building service shall be calculated. A Protective Coordination Study shall be performed to evaluate the connection from the switchstation to the last protective device in each circuit located in the new buildings.

1.10 FIRE PROTECTION

1.10.1 Drawings

Features of Fire Protection, their ratings, and the hazards requiring them, shall be clearly indicated. Sprinkler and fire alarm/detection areas shall also be clearly indicated. Fire detection and sprinkler systems shall be laid out and detailed sufficiently to indicate the designers understanding of the Section 01008 FIRE PROTECTION REQUIREMENTS. When other functions co-exist with the fire protection functions, their integration shall be clearly indicated, with an analysis that describes how both functions will be served. Provide a separate, composite type floor plan which makes an accurate presentation of these various features and functions. As part of the submittal, provide a set of plans that shows emergency egress for the facility.

1.10.2 Design Analysis

The design analysis shall include a separate fire protection report containing, but not limited to, review statements and/or comments on the following items, where applicable.

- a. Location and rating of fire walls and fire partitions.
- b. Column, floor, and roof protection.
- c. Path of travel for emergency egress and operation of panic exits.
- d. Access to building for fire fighting.
- e. Design and placement of fire and smoke stop doors.
- f. Labeled windows, where required.
- g. Venting of smoke.
- h. Placement of hand fire extinguisher cabinets.
- i. Type and adequacy of sprinkler system.

- j. Building exterior fire protection facilities and building clearances.
- k. Type of occupancy.
- l. Zoning of fixed fire protection systems.
- m. Type and adequacy of fire alarm and detection systems.
- n. Zoning of fire alarm and detection systems.
- o. Number of zones of alarm and detection systems that are separately transmitted to the base or installation fire department.

1.10.3 Technical Guide Specifications

None of the government provided guide specifications are required to be submitted at this design stage. However; any Contractor generated specifications required to meet the project specifics, or individual specification items added to the provided guide specifications shall be submitted for review. Note that UFGS guide specifications 13930A, WET PIPE SPRINKLER SYSTEMS, FIRE PROTECTION and 13851A, FIRE DETECTION AND ALARM SYSTEM, ADDRESSABLE are a part of this contract. As such they may be edited only for those portions that do not apply to this project. For the items that do apply, no changes may be made.

1.11 RESERVED

1.12 ENVIRONMENTAL PROTECTION, COMPLIANCE, AND PERMITS

Specification Section 01355 ENVIRONMENTAL PROTECTION and 01561 SOUTH DAKOTA NPDES PERMIT REQUIREMENTS FOR STORM WATER DISCHARGES FROM CONSTRUCTION SITES furnished with Division 1 of this RFP, contains requirements presently known to be required for environmental protection, compliance, and permits.

It is the Contractor's responsibility to provide any additional requirements to ensure that the project is in full environmental compliance with Federal, State, Regional and local laws and regulations. All new environmental requirements shall be submitted with the 60% Design Review Submittal.

1.12.1 Design Analysis Chapter

The Contractor shall prepare a chapter in the Design Analysis entitled: "ENVIRONMENTAL PROTECTION, COMPLIANCE, AND PERMITS". This chapter shall include a summary of environmental coordination, compliance, approvals, permits, and etc. required for the project. The Contractor shall include documentation of the coordinations, discussions, phone conversation records, and/or letters required to assure that the project is in full compliance with all Federal, State, Regional, and local environmental laws and regulations. A list of environmental permits, approvals, notifications, etc. that are required for the project shall be included.

1.12.2 Draft Environmental Protection Plan

The Contractor shall prepare and submit a Draft Environmental Protection Plan in accordance with the requirements of Section 01355 ENVIRONMENTAL PROTECTION. If additional environmental compliance plans are identified, the Contractor shall submit the additional environmental plans and/or attachments.

1.12.3 Submittal of Environmental Permits, Notices, Reviews and/or Permit Applications and Associated Documents

As an Appendix to the Draft Environmental Protection Plan, the Contractor shall submit copies of all environmental permits, notices, reviews, and/or approvals that are required for the project. Copies of the applications and associated documents required by the the environmental permits, notices, reviews, and/or approvals shall be included in the Environmental Protection Plan Appendix.

1.13 SUSTAINABLE DESIGN REQUIREMENTS

Provide a list of planned sustainable design features incorporated into the design of this facility.

PART 2 NOT USED

PART 3 NOT USED

-- End of Section --

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SECTION 01338

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PART 2 NOT USED

PART 3 NOT USED

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SECTION 01338

100 PERCENT DESIGN REQUIREMENTS

PART 1 100 PERCENT DESIGN SUBMITTALS

For general submittal requirements, see Section 01332 DESIGN AND CONSTRUCTION DELIVERABLES/PROCEDURES.

1.1 SITE PLANNING

1.1.1 Drawings.

All drawings shall be completely dimensioned in English units, labeled, and noted. All approved comments from the 60 Percent Design Submittal shall have been incorporated. Cross-reference applicable sheets for items shown. Drawings required:

Location Plan and Vicinity Map

Removal Plan

Environmental Hazards Remediation Plan

Site Plan

Site Details

Landscape Plan

Landscape Details

Irrigation Plan

The Contractor shall supply an Irrigation System Plan at the same scale as the Landscape Plan. Show the landscape plan with the proposed plant locations. Show completely designed drip irrigation system with all necessary components and lines with their material types and sizes shown and delineated. All section valves shall be numbered and tabulated to show the correct flow and pressure at which they operate.

Irrigation Details

Details of the irrigation equipment and system including valves, couplers, heads, controllers, precipitation rates, pipe material, and total flow and pressure requirements.

1.1.2 Specifications

- a. Provide complete edited specifications for all items. Technical specifications shall be complete and fully coordinated with the drawings. All specification indexes shall be completely edited to reflect the paragraphs retained in the body of the specification. All references that have not been used in the body of the specification shall be edited from the technical specification.

- b. Specifications shall be coordinated with the plans and include all items including seeding, trees and shrubs, plant irrigation, and exterior furnishings. Special sections shall be prepared to cover those subjects for which no pattern guide specifications are available. All UFGS guide specifications to be provided shall be in edited form showing all text to be deleted and added.

1.1.1.3 Design Analysis Narrative

Design analysis shall include the following:

1.1.1.3.1 References

Provide design references used in preparing the site design.

1.1.1.3.2 Basis For Design

The Design Analysis shall give the basis, specific goals, objectives and priorities for site design of the project. Identify, explain and document use of design criteria and how the design meets goals, objectives and priorities. Identify the preferred site development concept. Document pollution prevention measures and other environmental considerations made during the design process.

1.1.1.3.3 Irrigation System Calculations

A list of applicable criteria and/or design standards shall be provided. This shall include precipitation rates, allowable pipe material and calculations of total flow and pressure requirements. Include a narrative description of the system and list any special requirements and/or systems.

1.2 CIVIL

1.2.1 Drawings

1.2.1.1 Grading and Drainage Plans

Final grading and drainage plan shall be provided for the site. The scale shall be the same as the site plans. New and existing grading contours shall be indicated at 1-foot intervals. Indicate the finished floor elevation of the new building and structures. Plans shall show the layout of the new and existing storm drainage systems. Uniform grades shall be labeled using slope arrows. Provide spot elevations at building corners, parking area corners, changes in grade, detailed walk or patio areas, etc. Storm drainage lines and structures shall be labeled. The rim elevation of all manholes, curb inlets, and area inlets shall be indicated. Provide location and description of benchmarks and indicate vertical and horizontal datums.

1.2.1.2 Grading Sections

Provide a minimum of two grading sections (one east-west and the other north-south through the area of new grading work. These grading sections shall show new vs. existing grades, slopes of finished grades, finish floor elevations in the new building, and identification of main features such as parking areas, building, and walks.

1.2.1.3 Storm Drain and Culvert Profiles

Provide profiles of all new storm drains and culverts showing new and existing grades, new and existing utilities, pavement sections in detail, pipe diameters and lengths, pipe slopes, invert elevations, etc. Class and gauge of all storm drain and culvert pipes shall be provided. This information may also be included in Storm Drain and Subdrain Schedule drawings. Profiles of roof drain runout lines may or may not be provided, at the Contractor's discretion. However, invert elevations, lengths and pipe diameters of these roof drains shall be called out on the drawings.

1.2.1.4 Drainage Structure Details

Provide typical details of all storm drainage structures.

1.2.1.5 Pavement Details

Provide details of concrete curb and gutter, integral curb, typical pavement sections, typical sidewalk section, pavement utility cut details, and interface detail between new and existing pavement.

1.2.1.6 Erosion Control Details

Provide details of best management practices used to control erosion.

1.2.2 Specifications

Provide complete edited specifications for all items. Technical specifications shall be complete and fully coordinated with the drawings. All specification indexes shall be completely edited to reflect the paragraphs retained in the body of the specification. All references that have not been used in the body of the specification shall be edited from the technical specification.

1.2.3 Design Analysis Narrative

Design analysis shall include the following:

1.2.3.1 References

Provide design references used in preparing the civil design.

1.2.3.2 Grading

A narrative of the grading design and criteria used.

1.2.3.3 Drainage

A narrative of the drainage design and criteria used. Include information on the storm drain pipe materials selected and their ability to withstand earth dead loads and live loads that will be imposed.

1.2.3.4 Pavements

A narrative of the pavement design and the criteria used.

1.2.4 Design Analysis Calculations

1.2.4.1 Storm Drainage System Calculations

Storm Drainage System Calculations shall include the following:

- a. Drainage area map showing boundaries of each drainage area and respective drain inlet or culvert.
- b. Storm run-off calculations for each drainage area.
- c. Tabulation of capacities of new storm drains, including: diameter and slope of storm drain pipes, design storm discharge and velocity for each storm drain pipe, maximum discharge capacity of each storm drain pipe, headwater depth of each culvert during design storm discharge.
- d. Hydraulic capacity calculations for each new curb and area inlet.

1.2.4.2 Pavement Design Calculations

Calculations used to obtain the pavement design.

1.2.5 Storm Water Pollution Prevention Plan (SWPPP)

If construction activities results in disturbance of 1 acre of land or more, coverage under the EPA Storm Water General Permit For Construction Activities (Permit No. SDR10###) is required and the Contractor shall be responsible for complying with the requirements of Specification Section 01561 SOUTH DAKOTA NPDES PERMIT REQUIREMENTS FOR STORM WATER DISCHARGES FROM CONSTRUCTION SITES. The Contractor and the Omaha District Corps of Engineers shall be co-permittees. If coverage under the NPDES General permit is not required, Specification Section 01561 shall not be applicable.

1.3 GEOTECHNICAL

1.3.1 Drawings

1.3.1.1 Boring Location Plan

A boring location plan shall be provided. The boring location plan shall be at the same scale used for the Site Plan. A copy of the boring location plan issued with this RFP is part of the attached report titled, "Geotechnical Engineering Report, Proposed B1-B Squadron Operations Facility, Ellsworth Air Force Base, Meade County, South Dakota" as prepared by Terracon, dated 14 April 2003, as found in Attachment 15.

1.3.1.2 Boring Log Sheet

Boring logs shall be provided on a separate sheet of the drawings.

1.3.2 Design Analysis

A copy of the Geotechnical Engineering Report (Attachment 15) and the Geotechnical Engineering Letter (Attachment 16) shall be included as an appendix to the Design Analysis.

1.4 WATER SUPPLY AND WASTEWATER

1.4.1 Drawings

Generally, the corrected and approved 60 percent plans may be used as the basis for the final plans. However, all details necessary for complete construction must be included. The 100 percent final design submittal shall include all the information presented in the 60 percent submittal,

updated to final design status, corrected to reflect any changes made in response to review comments, and shall include the additional requirements specified hereinafter. Any concerns in developing the final design documents shall be resolved prior to starting the final design stage.

1.4.1.1 Water Distribution and Sewage Collection Systems Plans (including building services)

Provide all existing utilities and above ground features, including sizes and material types, which may pose as an obstacle (i.e., water, sewer, gas, electrical, etc.) on the basic site plan layout. Indicate existing pipe material and sizes where new lines connect along with the type of connection and elevations of connections. Provide all new water and sewer lines with sizes. This shall include all new service lines, up to within the 5 foot building line. Locations of all new manholes, fire hydrants, valves (including PIV's), similar appurtenances, connection points and etc. shall be provided. For pavement cuts, show type of pavement to be removed and replaced. Show contours on plan view. Include stationing on both plan and profile sheets.

1.4.1.2 Water Distribution and Sewage Collection Systems Profiles

Profiles of all gravity sewers, waterlines and sewage forcemains shall be provided. Profiles may be omitted for short waterlines, unless necessary to assure adequate cover or avoid interference with other underground facilities. Indicate existing pipe material and sizes where new lines connect. Indicate type of connection and elevation. Include all interference elevations.

1.4.1.3 Water Distribution and Sewage Collection Systems Details

Appropriate water and sewer details shall be provided. Use Omaha District standard detail drawings. The standard detail sheets shall be furnished if required. For roadway pavement crossings, indicate installation method (open cut, boring, jacking, etc.). Include standard casing details.

1.4.2 Specifications

Specifications shall be coordinated with the plans and include all items. Provide special sections to cover those subjects for which no UFGS guide specifications are used or available. These special sections shall include all approved changes from the 60 percent review stage. All UFGS guide specifications to be provided shall be in edited form showing all text to be deleted and added.

1.4.3 Design Analysis Narrative

Design analysis shall include the following and all applicable data contained in the 60 percent design analysis narrative shall be repeated. References shall not be made to the previous design analysis. The final design analysis shall be corrected to reflect changes in content made in response to review comments, and shall be expanded to reflect the completed design.

1.4.3.1 References

Provide design references used in preparing the water and wastewater design.

1.4.3.2 Water Supply and Distribution Systems

A narrative of the water supply and distribution systems design and applicable criteria used shall be provided. Include the peak and average domestic demands, the interior and exterior fire flow requirements and the available flow and residual pressures. A description of the water distribution system, and complete calculations necessary to support equipment, piping sizes, interior and exterior fire demands, and domestic demands, etc. shall be provided.

1.4.3.3 Wastewater and Sewers

A narrative of the wastewater supply design and applicable criteria used shall be provided. Include the average and peak contributing flows along with the available capacity and full flow capacity of the existing system. A listing of allowable piping materials, and complete calculations necessary to support equipment and piping sizes shall be provided.

1.5 ARCHITECTURAL

1.5.1 Drawings

The drawings shall be complete, include all necessary and required details, thoroughly checked, and fully coordinated with the technical Specifications and all other Construction Documents. Previous comments and applicable criteria changes shall have been incorporated into the design. Removal work and details shall be shown on separate drawings. The contract drawings shall fully describe the type and the scope of work required. The layout of individual sheets and the organization of the assembled set shall follow and communicate a logical sequence. General information shall be presented first, progressing to more detailed information. When assembling details, begin in the upper left-hand corner of the sheet with letters progressing to the right and down. When dimensioning, use arrowheads, not dots or slashes. Where major structural elements are included as parts of architectural detailing, do not indicate sizes. These elements must be fully defined in the structural design documents. See 60% Architectural drawing submittal requirements for drawing scales of remaining drawings to be submitted. Include all drawings from the 60% submittal plus all additional detail drawings required for complete 100% design. These shall include but not be limited to the following:

- Floor and Wall Patterns/Borders
- Interior Elevations and Details
- Door Details
- Window Details
- Louver Details
- Roof Details
- Stair Details
- Casework Plans, Elevations, and Details
- Wall Plan Details and Plan Details
- Fire Wall Details and Penetration Conditions
- Sealant Details
- Ceramic Tile Details
- Ceiling Details
- Control/Expansion Joint Details
- All Miscellaneous Details
- Color CADD Perspective Rendering (minimum size: 20" x 28")

1.5.2 Technical Specifications

The technical specifications shall be complete and fully coordinated with the drawings. Special sections shall be prepared to cover those subjects for which no pattern guide specification is available. Notes to the Designer that accompany specifications shall be used in editing technical guide specifications. All specification indexes shall be completely edited to reflect the paragraphs retained in the body of the specification. All UFGS guide specifications shall be edited in accordance with Section 01332 DESIGN AND CONSTRUCTION DELIVERABLES/PROCEDURES.

1.5.3 Design Analysis Narrative

The Design Analysis shall include the basic information presented in the previous submittal, corrected to reflect changes in content made in response to review comments. Outline specifications shall be omitted from the Final Design Analysis as the information is included on the final drawings and project specifications. The design analysis shall be written in the present tense.

1.5.4 Design Analysis Calculations

The Design Analysis calculations shall include the basic information presented in the previous submittal, corrected to reflect changes in content made in response to review comments.

1.5.5 Leadership in Energy and Environmental Design (LEED) Questionnaire

The Green Building Rating System LEEDS Questionnaire, available from the U.S. Green Building Council, shall be completed by the Contractor and submitted to the government for information only. The building in this project will not require LEEDS certification.

1.5.6 Common Deficiencies

Some repeated errors have occurred in the preparation of design documents in the past. Subsequently these errors have been identified and the Contractor directed to make corrections. The work involved in such corrections becomes lost effort and time for the designer. Some of these errors which are most often overlooked include:

- a. Not using correct abbreviations or terminology on the drawings. Abbreviations must match what is used on the standard abbreviation sheet and terminology must match what is used in the standard technical guide specifications.
- b. Not using the correct scales, north arrow designation, section cut system, or incomplete dimensioning on the drawings.
- c. Not providing sufficient space for door operation hardware at doors which swing into a wall running perpendicular to the opening. 4 inches minimum is required between edge of door frame and perpendicular walls.
- d. Not providing correct and complete Design Analysis information written in the present tense. The Design Analysis shall be written following the format indicated herein. A separate Fire Protection section in the Design Analysis with input from all disciplines is one area which is often overlooked and shall be included.

- e. Not providing a structural stoop at exterior doors where the slab is at the same approximate elevation as the interior floor. The use of simple slabs on exterior grade leads to lifting of the slab in below-freezing temperatures which interferes with the safe operation of the door.
- f. Not correctly presenting or coordinating (to avoid interference) features of Fire Protection, Noise Control, and Physical Security.
- g. Not correctly referencing and cross referencing building sections, wall sections, details, etc.
- h. Failure to read/use technical notes in editing the Technical Guide Specifications.
- i. Failure to coordinate all disciplines prior to submittal of projects for review.
- j. Improper use of fire-retardant wood. Fire-retardant wood is combustible; its use in buildings that are of noncombustible construction is extremely limited (see IBC for the minor allowable uses). Because of the potential for severe degradation, fire retardant plywood shall not be used in a roof or roofing system, or in structural applications.
- k. Incorrectly listing trade names in door hardware specifications in lieu of ANSI numbers and failure to correctly specify hardware finishes.
- l. Control joints in CMU walls and brick expansion joints in face brick are not shown on both architectural plans, elevations and structural plans, or are inconsistent. Note also control joint locating and coordination for floor tile per Tile Council of America recommendations.
- m. Failure to delete all publications which do not apply to the particular project.
- n. North is not oriented the same direction on all sheets (civil, site, arch).

1.6 INTERIORS

1.6.1 Design Analysis/Narrative

Updates as a result of the 60% review conference shall be made to the design analysis.

1.6.2 Drawings

1.6.2.1 Furniture Footprint

Updates required to the furniture footprint as a result of 60% review shall be incorporated into the drawings.

1.6.3 Technical Specifications

Technical specifications shall be in final form for construction (in

accordance with the requirements of Section 01332 DESIGN AND CONSTRUCTION DELIVERABLES/PROCEDURES) and shall include all changes requested during the 60% review stage. All specifications shall be completely edited and fully coordinated with the drawings to accurately and clearly identify the product, installation requirements, and testing methods for this facility.

1.6.4 Color Boards and Legends

Color boards shall show actual color samples of all proposed exterior and interior finishes and specialties. A color board legend shall accompany the boards and shall clearly identify all finishes. Clarification of finish placement shall be required when more than one color of a single finish is proposed. Color boards shall be 8 1/2" x 11" in size and be provided in a three ring binder. Include project name and location, design stage and date on the front cover and spine of the binder.

1.7 STRUCTURAL

1.7.1 Drawings

Final drawings shall be complete, thoroughly checked, and fully coordinated with the other disciplines, specifications and all other construction documents. Previous comments and applicable criteria changes shall have been incorporated into the design. The drawings shall be complete with all plan views, elevations, sections, details, schedules, diagrams, and notes necessary for the construction of the project. For structural steel framing, the drawings shall meet the requirements for design drawings set forth in the AISC Specification for the Design, Fabrication, and Erection of Structural Steel for Buildings. All structural steel members and connections shall be fully detailed. Design of structural steel connections shall be the responsibility of the structural design engineer and shall not be delegated to the steel fabricator. For structural concrete, the drawings shall conform to the standards for engineering (design) drawings set forth in the ACI Detailing Manual-1988 (SP-66). Additionally, those items described below which are applicable to the design shall be incorporated into the drawings. Drawings shall be at a scale appropriate for the design, in no case however, shall plan type drawings be done at a scale smaller than 1/4" = 1'-0" or detail type drawings at scale smaller than 3/4" = 1'-0".

1.7.1.1 Grid Systems, Dimensions, and Floor Elevations

Each foundation and slab plan, floor framing plan and roof framing plan shall have an alpha-numeric grid system aligned with any columns or pilasters, or with load bearing and non-load bearing walls, as applicable. The same grid system shall be used for all plan views. Each plan view shown shall have all necessary dimensions. On plan views, the dimensions shall define the location of grid lines, offsets, and all structural elements, as well as the overall sizes of the structure. The finish elevation of the main ground floor slab shall be indicated as 100'-0", and elevations for all other structural elements shall be numerically referenced to this basic elevation. See Site Plans for additional information.

1.7.1.2 Plan Sheets

a. Foundation and Slab Plans

Foundation and slab plans shall show the size and location of all

foundation elements, such as foundation walls and footings. Elevations for footings shall be indicated on the plan. Plans for slabs-on-grade and exterior stoop slabs at building entrances shall show location and type of joints, slab thicknesses and reinforcing, elevation of slab surfaces, and any other design features, such as equipment bases, which affect the slab design. Also, plans shall note the placement of vapor barrier and capillary water barrier under slabs.

b. Roof Framing Plans

Roof framing plans shall be provided for all parts of the structure. Plans shall show the size, spacing, and location of all roof framing members, their supporting columns, pilasters or walls, all auxiliary members such as bracing and bridging, the orientation and extent of coverage of structural roof deck materials, and the size, location and framing of all major openings through the roof.

1.7.1.3 Elevation Views, Sections and Details Sheets

Elevation views, sections and details necessary to illustrate fully the design shall be provided. Some requirements peculiar to the various structural materials are described below.

a. Concrete

Include elevation views as necessary, plus sections and details to show the outlines of concrete cross-sections, reinforcing bar arrangements, concrete cover for rebar, installation of embedded items, and joint construction. All lap splice and embedment lengths for reinforcing bars shall be clearly indicated on the drawings. A sill detail for each foundation condition at exterior and interior doors shall be provided.

b. Masonry

Wall reinforcing shall be located and identified on plans, in section cuts, elevation views or in schedules. Structural elevations when needed shall be included to clarify the construction requirements for masonry reinforcement, especially the reinforcement around wall openings. Details applicable to the project shall be shown on the structural drawings. Listed below are some frequently required masonry details, most of which are shown in Army Corps of Engineers TI 809-04, Air Force Technical Manual AFM 88-3, Chp 13, and on the Typical Masonry Sheets. The Typical Masonry Sheets will be provided to the successful offeror upon request and may be edited and incorporated into the final drawings as needed. Additional details as required shall be extracted from other sources and incorporated into the final drawings. All details shall be fully edited to reflect the specific requirements of this project. Supplemental details shall be added as necessary to complete the design.

Masonry Details Frequently Used

- Masonry Control Joint (MCJ).
- Control Joint at Bond Beam.
- Bond Beam Corner Reinforcement.

- Seismic Reinforcement Around Wall Openings.
- Wall Reinforcement Details for 1 and/or 2 bar-per-cell stiffeners.
- Doweled or Other Connection of Masonry to Foundation, Floor, Roof or Bond Beam.
- Bond Beam (or Steel) Lintels and Bearing Details
- Lateral Support Detail for Top of Masonry Partition Walls. (lateral support locations must be shown on framing plan sheets.)

c. Structural Steel, Steel Joists, and Steel Decking

Structural steel connections shall be fully detailed and shown on the drawings. The anchorage of beams, trusses, joists, and steel deck to walls or other bearings, and the extra framing or reinforcement required at deck openings shall also be detailed. Notes, details, or schedules on the drawings shall indicate the steel deck attachment method to be used, and shall give the size and spacing for perimeter, side lap, intermediate supports and end lap attachments. Welded connections shall be detailed using standard weld symbols illustrated in AWS D1.1. All applicable weld sizes, spacing, types, contours and finishes shall be shown.

1.7.1.4 Schedules

a. Foundation Schedules

Foundation schedules for footings shall be included, as applicable. The schedule shall include all pertinent information required for the foundation system being used.

b. Framing Schedules

For concrete framing, beam and column schedules shall conform to the requirements of the ACI Detailing Manual. For structural steel framing, provide a column schedule complete with column base plates and design loads at splices, if any, and at column bases.

1.7.1.5 Equipment Loads

All equipment loads which exceed 200 pounds and are not supported by concrete slab-on-grade shall be identified on the drawings by showing equipment locations, total weights, and reaction loads at support points.

1.7.1.6 Notes

a. Design Notes

Under the heading "Designer's Notes," the structural drawings shall contain notes which begin: "The structural design was prepared using the following data:". The data then listed shall include the structural loading criteria used for design, such as roof and floor live loads, snow load design parameters, wind speed and wind load design parameters, seismic design parameters, allowable soil bearing pressures (as recommended by the Geotechnical Engineering Report; Attachment 15), foundation design depth, design wind uplift pressures for steel joists and other data pertinent to future alterations. Also, to be listed are the ASTM designations and stress grades of the applicable structural

materials: steel, masonry, concrete for each usage, reinforcing bars, welds, and bolts.

b. General Notes

Other notes, which direct the work to be performed, the materials to be used, etc., shall be grouped under the heading of "General Notes." Included in these notes should be a description of the building's structural system, if necessary.

1.7.2 Specifications

Technical specifications for final design shall be prepared in accordance with the instructions provided in Section 01332 DESIGN AND CONSTRUCTION DELIVERABLES/PROCEDURES, Paragraph 3.2 "Specifications". The technical specifications shall be complete and fully coordinated with the drawings. All specification indexes shall be completely edited to reflect the paragraphs retained in the body of the specification. All references that have not been used in the body of the specification shall be edited from the technical specification (Using SPECSINTACT "Reconcile References" feature).

1.7.3 Design Analysis Narrative

The final design analysis narrative shall repeat and expand upon the basic information presented in the 60% design analysis narrative, and shall be corrected to reflect revisions made for the final design.

1.7.4 Design Analysis Calculations

Calculations shall be prepared by an licensed Structural Engineer and shall include an investigation of loading, (gravity, wind, seismic, etc.) shear, moment, wind uplift, stability and deflection calculations. Design calculations shall include a Progressive Collapse Analysis and a Loss of Lateral Support Analysis, as defined in the Structural Requirements portion of this document. All computations are to be systematic and accurate. Similar beams, columns, panels, or connections may be grouped by designing the largest member or connection in the group, but every individual slab, beam, column, footing, connection or other structural member or structural consideration indicated by the plans shall be accounted for by pertinent calculations, statement or reasoning, or reference to source. Design formulas shall be written out in symbols the first time each is used, before the numerical values are supplied. All answers shall be identified by dimensional units. Basic assumptions of loads, working stresses, and methods of analysis must appear in the calculations; these assumptions must be applied consistently to a given problem. The calculations shall be presented in a clear and legible form, incorporating a title page, table of contents, and a tabulation showing all design loads and conditions. Pages shall be numbered consecutively and identified in the table of contents. Cross referencing shall be clear. The source of loading conditions, formulas, and references shall be identified. Assumptions and conclusions shall be explained. Superseded areas of computations must be ruled out. All computations shall be given a complete numerical and theoretical check within the Contractor's office. Calculation sheets shall carry the names or initials of the developer and the checker, and the dates of calculations and checking. No portion of the design calculations shall be developed and checked by the same individual.

1.7.4.1 Computer Calculation Submittals

All applicable input and output data shall be included in readable printed form as part of the design calculations. Continuous paper such as that used in computer terminals or printers shall be cut into individual pages and shall not be submitted in a continuous roll form. All input and output data shall include a brief synopsis of the computer program(s) stating required input, method of solution, approximations used, codes and specifications used, output generated, extent of previous usage or certification of the program(s), and program author(s). Generalized flow chart(s) may be used to supplement description of solution process, if desired. All computer generated and long-hand calculation sheets shall be identified by sheet number, indexing and cross-referencing. Each member or structure being analyzed shall be identified, dimensioned and shown in a loading diagram. A separate diagram shall be provided for each load case, such as dead plus live, dead plus wind, etc. Input and output values including intermediate values shall clearly be identified if such values are necessary for evaluation of the submittal.

1.8 MECHANICAL

The 100 percent final design submittal shall include all the information presented in the 60 percent submittal, updated to final design status, corrected to reflect any changes made in response to review comments, and shall include the additional requirements specified hereinafter. Any concerns in developing the final design documents shall be resolved prior to starting the final design stage.

1.8.1 Design Drawings

The final design drawings shall be fully coordinated with the Design Analysis and specifications. Provide sufficient plans, piping diagrams and isometrics, mechanical room sections, water and air flow diagrams, details, schedules, control diagrams, sequences of operation, etc., as necessary to define the design requirements. Large-scale plans of congested areas shall be provided. Coordinate with architectural design for provision of access panels for all concealed valves, traps and air vents, etc. Floor plans shall use the architectural floor plans as a basis, with the building outline half-toned. The final design drawings shall include all the requirements and drawings defined for the 60 percent submittal. In addition, the following new drawing requirements and drawings shall be provided:

1.8.1.1 Mechanical Abbreviation, Legend, and General Notes Sheet

On this sheet, include any mechanical general installation notes that may be required to clarify the construction intent that may not be readily apparent in the specifications or on the drawings. General notes may be provided on a separate sheet if space does not exist on the Abbreviation and Legend sheet.

1.8.1.2 Plumbing Drawings

a. Enlarged Mechanical Room Plumbing Plan

An enlarged mechanical room plumbing plan drawn at a minimum 1/4" = 1'-0" scale shall be provided. Plan shall show layout of all plumbing equipment and piping within the rooms. In addition to all the plumbing systems required, the plan shall show half-toned

outlines of all HVAC equipment located in the room, gas service, lawn sprinkler apparatus, the fire protection entrance and risers, and the outline of any electrical panels or equipment located in the room.

b. Plumbing Detail and Schedule Sheet

At a minimum, the following details shall be provided: water heaters, and water service entrance. The provided plumbing fixture schedule and a Contractor-generated water heater schedule shall be provided.

c. Enlarged Toilet Room Plans

Enlarged toilet room plans showing all fixtures, water, waste, and vent piping shall be provided for each toilet area. Enlarged plans shall be drawn at a minimum 1/4" = 1'-0" scale.

1.8.1.3 Mechanical HVAC Drawings

a. Mechanical HVAC Plans

All ductwork shall be shown as double-lined.

b. Hot Water System Flow Diagram:

Provide flow diagram showing the facility piping system including the pumps and connected equipment. Each pump and equipment item shall show associated flowrate. All thermometers, pressure gauges, isolation and control valves, bypass piping, freeze protection piping, etc. shall be shown on the flow diagram. Coordinate water flow with control valves so that adequate three-way valves are provided to insure minimum flow rates through boiler at low building load demands.

c. Mechanical Detail Sheets:

Installation details showing all specification requirements such as isolation and balancing valves, thermometers, pressure gauges, equipment pads, strainers, vents, hangers, vibration isolation, etc. shall be provided for each item of mechanical equipment. As a minimum, the following mechanical details shall be provided to the extent they are included in the design:

Refrigerant Piping Diagram
Hot Water Boiler and Piping Diagram
Hot Water Pumps
Hot water coil piping
Expansion Tanks
Horizontal Unit Heater
Vertical Unit Heater
Chemical Shot Feeders
Gas Service Entrance
Cabinet Unit Heater
Air Handling Units
Wall Propeller Supply/Exhaust Fan
In-line Supply/Exhaust Fan
Relief Hood

Relief Vent

Seismic Requirements for Floor-Mounted and Suspended Equipment

d. Mechanical Schedule Sheets

Schedules shall be provided for each item of mechanical equipment. Furnished generic equipment schedules shall be used whenever possible and shall be completed and/or revised as necessary to suit the project requirements.

1.8.1.4 HVAC Control Drawings

In addition to the updated Controls Legend and System Block Diagram Sheets, final HVAC control drawings for each system and item of equipment shall be in accordance with the following requirements:

a. Control Diagrams:

Control Diagrams shall be provided for each system or item of equipment. Systems diagrams shall include every major component installed in or connected to the system, and only one system shall be shown on each diagram. Control Diagrams shall schematically show all sensors, controllers, actuators, indicators, and operator interface devices that are required for the complete automatic control and monitoring of the system. All sensing devices utilized in the control or instrumentation of the system, and all actuating devices shall be shown in their correct mechanical location and functionally interconnected to the other control devices which comprise the control loop. All controlling devices shall be shown with all functional interconnections to inputs and outputs. Each sensing, controlling, actuating, and indicating device shall have its own unique control loop tag identifier. Communication linkages required to complete the entire intended interface between operators and the control system shall be shown schematically. This includes interconnections between local temperature control panels and the base EMCS. All associated thermometers and pressure gauges, located in their correct mechanical locations, shall also be shown on the diagrams. See furnished Example HVAC Control Drawings for the required level of detail and formatting.

b. Sequence of Operations:

Sequence of Operations shall be provided for each item of equipment or system and shall fully describe the intended operation of the equipment or system in all different operating modes. As identified on the furnished Example Control Drawings, each Sequence shall be broken down by individual control loops and shall include descriptions of both normal operating modes (running, shutdown, standby, etc.) and abnormal, emergency or safety related modes. Sequences shall include a description of all indication instrumentation, alarm conditions, and automatic actions to be taken upon occurrence of alarm conditions. Each device referenced in the sequence shall be referred to by its unique tag identifier, with each component designator shown in parenthesis. Design setpoints shall be specified for each control loop and indicated as being adjustable. See furnished Example HVAC Control Drawings for the required level of detail and formatting.

The designer shall analyze every component of each system and write each Sequence of Operation to compliment the Functional Performance Checklists. The Sequence of Control on the project drawings shall be explicit and written to ensure that all the requirements of the "Functional Performance Test Checklists" can be accomplished.

c. Control Points Lists:

Control points lists, identifying each temperature control system input and output, shall be developed for each temperature control panel. See furnished Example HVAC Control Drawings for the required level of detail and formatting.

1.8.2 Technical Specifications

The guide specifications shall be edited and coordinated with the drawings and Design Analysis to identify the product and installation requirements of the facility.

Materials, items of equipment, or installation requirements identified in the provided specifications but not required for the facility shall be marked for deletion. Where materials, items of equipment, or installation requirements are not covered in the provided specifications; special sections within each guide specification shall be prepared to cover those subjects.

1.8.3 Design Analysis Narrative

The Final Design Analysis Narrative shall include the information presented in the 60 percent submittal, shall be corrected to reflect changes in content made in response to review comments, and shall be expanded to reflect the completed design.

1.8.4 Design Analysis Calculations

The Final Design Analysis calculations shall include all the information presented in the 60 percent submittal, shall be corrected to reflect changes in content made in response to review comments, and shall be expanded to reflect the completed design.

1.9 ELECTRICAL

1.9.1 Drawings

Drawing scale shall match architectural drawing requirements.

1.9.1.1 Interior Drawings

Drawings shall be complete and accurate in every detail and shall include arrangements and types of light fixtures, receptacles, switching, location of special features, necessary details, including legends, fixture schedule, panel schedules, one-line diagrams, layout or functional diagrams for each of the various systems, riser diagrams if applicable, estimated maximum demand for each panel and for entire building and any other relative information which will help clear up any and all questionable items on the plans or in the specifications toward the development of a set of plans which will be clear, concise and correct. Additional drawing

requirements for specific equipment or systems have been included in subsequent paragraphs pertaining to the equipment or systems.

1.9.1.2 Floor Plans

All rooms must be identified by name and number. Plans must be legible. Plans shall be developed using the same scale and areas as the architectural floor plans. Separate floor plans must be provided for lighting, power, communications, and fire detection.

1.9.1.3 Diagrams

The power one-line diagram shall be on a dedicated sheet. The diagram shall show ratings of major equipment, feeders, etc. including short circuit ratings. Power, communications diagrams, fire detection and telephone diagrams shall be on separate sheets, also.

1.9.1.4 Schedules

Provide panelboard and lighting fixture schedules. Panelboard schedules shall include the designation, location, mounting (flush or surface), number of phases and wires, voltage, ampacity and total connected and demand load. Indicate the trip rating, frame size, interrupting rating and number of poles for each circuit breaker in the panelboards. List the circuit number, circuit description and load for each branch circuit.

1.9.1.5 Exterior Drawings

Drawings shall be complete and accurate in all details and shall include the routing of all feeder and branch circuits.

1.9.2 Specifications

All specifications shall be completely edited and fully coordinated with the drawings to accurately and clearly identify the product, installation requirements, and testing methods for this facility.

1.9.3 Design Analysis Narrative

The text of the preliminary design analysis shall be expanded to reflect the completed design. Calculations used to develop the design shall be included. The document in its final form shall conform in all applicable respects to the requirements of Section 01007 ELECTRICAL DESIGN REQUIREMENTS.

1.9.4 Design Analysis Calculations

Backup data shall be furnished to support basic design decisions related to sizing of major equipment and materials, selection of economic alternatives, performance of specific systems or equipment. Calculations may be performed by manual or computerized procedures. Use of standardized charts, curves, tables and graphs will generally be acceptable for portions of required calculations or in lieu of specific calculation procedures. Such data must be from a recognized source which is identified in the design analysis. If possible, a copy of applicable sheets or pages should be included with the calculations. For given equipment, the calculations must conform to requirements identified under subsequent paragraphs herein pertaining to the equipment.

1.9.4.1 Service

Sizing of building service.

1.9.4.2 Transformers

Sizing of all transformers. (Generally for dry type transformers, 1 or 2 samples of detailed calculations to identify the method are sufficient, if input data for remaining units can be derived from panel or feeder sizing data.)

1.9.4.3 Feeders

Sizing of feeders (one detailed sample calculation is sufficient to establish the procedure, remaining data can be in schedules, tables, etc.).

1.9.4.4 Panelboards

Sizing and loading of panelboards and distribution equipment.

1.9.4.5 Voltage drop determination

Provide voltage drop calculations in accordance with IEEE 241 to demonstrate that the voltage drop requirements of NFPA 70 are satisfied.

1.9.4.6 Illumination calculations

Data shall identify target and calculated illumination levels for all rooms and areas. Calculations shall be adjusted to compensate for special applications -- irregularly shaped rooms, open sides, ceiling obstructions (beams, ductwork), corridors, etc. If the lumen method is used for corridor calculations, the calculations shall be performed using a module in which the length doesn't exceed 3 times the width (2:1 ratio preferred).

1.9.4.7 Short Circuit Evaluation

Calculate the fault current in accordance with IEEE 242 for each node in the electrical distribution system.

1.9.4.8 Protective Coordination Analysis

A protective coordination study shall be performed to show that the power system is selectively coordinated and is fully coordinated with the upstream loadcenter breakers. The protective coordination / short circuit study shall be complete and approved by the government before any changes are made to the existing equipment.

1.9.4.9 Specialized Applications

Additional engineering backup shall be included to address special requirements such as accommodation of nonlinear loads, harmonics analysis, energy studies, etc.

1.10 FIRE PROTECTION

1.10.1 Drawings

Design shall be an extension of the 60% submittal, incorporating all comments thereto and any revised criteria, all as specifically directed by

the District Office. All conflicts, lack of specific criteria, and/or direction, inconsistencies, ambiguities, and lack of thorough understanding of the nature and scope of work shall be resolved prior to starting final design work. The fire protection plans shall show the following: entire sprinkler system; fire detection system, to include control panels, remote annunciators, alarm notification devices, and each initiating device; fire walls; fire partitions; building separations; other fire protection features.

1.10.2 Design Analysis

The final design analysis shall be an extension of the 60% design analysis and shall be complete for every item covered in the design and shall include, but not be limited to, the following:

- a. List of design criteria.
- b. Design conditions.
- c. Design calculations.
- d. Complete description of system alarm zones.
- e. Complete description of system sprinkler system.
- f. Complete description of the building fire protection features.
- g. Other pertinent information of value for future use in construction contract administration, substantiation of design methods, or permanent record shall be included.

1.10.3 Technical Guide Specifications

UFGS guide specifications shall be completely edited and fully coordinated with the drawings to accurately and clearly identify the product and installation requirements for the facility.

All items identified in the specifications that are not required shall be marked for deletion in accordance with the requirements of Section 01332 DESIGN AND CONSTRUCTION DELIVERABLES/PROCEDURES. Those items of equipment, materials, or installation requirements that are required are not permitted to be modified or changed from that presently shown. Government approval is required for the final submittal of these guide specs.

1.11 NOT USED

1.12 ENVIRONMENTAL PROTECTION, COMPLIANCE, AND PERMITS

All environmental requirements that have been identified during the design process shall be include in the 100% Environmental Protection, Compliance, and Permits Design Analysis Chapter, the 100% Environmental Protection Plan, and/or Appendix to the Environmental Protection Plan.

1.12.1 Design Analysis Chapter

The Contractor shall update the chapter in the Design Analysis entitled: "ENVIRONMENTAL PROTECTION, COMPLIANCE, AND PERMITS". The updated chapter shall include additional summaries of environmental coordination,

compliance, approvals, permits, and etc. required for the project. The Contractor shall include additional documentations of the coordination, discussions, phone conversation records, and/or letters required to assure that the project is in full compliance with all Federal, State, Regional, and local environmental laws and regulations. The Contractor shall include an updated list of environmental permits, approvals, notifications, etc. that are required for the project.

1.12.2 Environmental Protection Plan

The Contractor shall update the 60% Draft Environmental Protection Plan to include all additional environmental requirements identified. The updated plan shall be submitted for final review and acceptance.

1.12.3 Appendix to the Environmental Protection Plan

As an Appendix to the Final Environmental Protection Plan, the Contractor shall submit copies of the completed permit applications and associated documents, notices, reviews, and/or approvals that are required for the project. Copies of all permits and/or approvals required for the project shall be included along with any additional requirements and/or conditions of the permits which are required during and/or at completion of construction.

1.12.4 NPDES Storm Water Permit

If the project requires coverage under Specification Section 01561 SOUTH DAKOTA NPDES PERMIT REQUIREMENTS FOR STORM WATER DISCHARGES FROM CONSTRUCTION SITES, the Contractor shall submit the following.

1.12.4.1 Notice of Intent (NOI)

Parts I and II of the Contractor's NOI shall be completed.

1.12.4.2 Notice of Termination (NOT)

Parts II and III of the NOT shall be completed.

1.12.4.3 Storm Water Pollution Prevention Plan (SWPPP)

Complete the Storm Water Pollution Prevention Plan. An SWPPP outline can be obtained from the Omaha District COE, or the Contractor can utilize a form of their own.

1.13 SUSTAINABLE DESIGN REQUIREMENTS

Provide a list of sustainable design features actually incorporated into the design of this facility.

The Green Building Rating System LEEDS Questionnaire, available from the U.S. Green Building Council, shall be completed by the Contractor and submitted to the government for information only.

PART 2 NOT USED

PART 3 NOT USED

-- End of Section --

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SECTION 01355

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ENVIRONMENTAL PROTECTION
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1.1 REFERENCES

U.S. AIR FORCE (USAF)

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

49 CFR 171 - 178 Hazardous Materials Regulations

SWPPP Storm Water Pollution Prevention Plan

WETLAND MANUAL Corps of Engineers Wetlands Delineation

Manual Technical Report Y-87-1

1.2 DEFINITIONS

1.2.1 Environmental Pollution and Damage

Environmental pollution and damage is the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to human life; affect other species of importance to humankind; or degrade the environment aesthetically, culturally and/or historically.

1.2.2 Environmental Protection

Environmental protection is the prevention/control of pollution and habitat disruption that may occur to the environment during construction. The control of environmental pollution and damage requires consideration of land, water, and air; biological and cultural resources; and includes management of visual aesthetics; noise; solid, chemical, gaseous, and liquid waste; radiant energy and radioactive material as well as other pollutants.

1.2.3 Contractor Generated Hazardous Waste

Contractor generated hazardous waste means materials that, if abandoned or disposed of, may meet the definition of a hazardous waste. These waste streams would typically consist of material brought on site by the Contractor to execute work, but are not fully consumed during the course of construction. Examples include, but are not limited to, excess paint thinners (i.e. methyl ethyl ketone, toluene etc.), waste thinners, excess paints, excess solvents, waste solvents, and excess pesticides, and contaminated pesticide equipment rinse water.

1.2.4 Installation Pest Management Coordinator

Installation Pest Management Coordinator (IPMC) is the individual officially designated by the Installation Commander to oversee the Installation Pest Management Program and the Installation Pest Management Plan.

1.2.5 Land Application for Discharge Water

The term "Land Application" for discharge water implies that the Contractor shall discharge water at a rate which allows the water to percolate into the soil. No sheeting action, soil erosion, discharge into storm sewers, discharge into defined drainage areas, or discharge into the "waters of the United States" shall occur. Land Application shall be in compliance with all applicable Federal, State, and local laws and regulations.

1.2.6 Pesticide

Pesticide is defined as any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest, or intended for use as a plant regulator, defoliant or desiccant.

1.2.7 Pests

The term "pests" means arthropods, birds, rodents, nematodes, fungi,

bacteria, viruses, algae, snails, marine borers, snakes, weeds and other organisms (except for human or animal disease-causing organisms) that adversely affect readiness, military operations, or the well-being of personnel and animals; attack or damage real property, supplies, equipment, or vegetation; or are otherwise undesirable.

1.2.8 Surface Discharge

The term "Surface Discharge" implies that the water is discharged with possible sheeting action and subsequent soil erosion may occur. Waters that are surface discharged may terminate in drainage ditches, storm sewers, creeks, and/or "waters of the United States" and would require a permit to discharge water from the governing agency.

1.2.9 Waters of the United States

All waters which are under the jurisdiction of the Clean Water Act, as defined in 33 CFR 328.

1.2.10 Wetlands

Wetlands means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, and bogs. Official determination of whether or not an area is classified as a wetland must be done in accordance with WETLAND MANUAL.

1.3 GENERAL REQUIREMENTS

The Contractor shall minimize environmental pollution and damage that may occur as the result of construction operations. The environmental resources within the project boundaries and those affected outside the limits of permanent work shall be protected during the entire duration of this contract. The Contractor shall comply with all applicable environmental Federal, State, and local laws and regulations. The Contractor shall be responsible for any delays resulting from failure to comply with environmental laws and regulations.

1.4 SUBCONTRACTORS

The Contractor shall ensure compliance with this section by subcontractors.

1.5 PAYMENT

No separate payment will be made for work covered under this section. The Contractor shall be responsible for payment of fees associated with environmental permits, application, and/or notices obtained by the Contractor. All costs associated with this section shall be included in the contract price. The Contractor shall be responsible for payment of all fines/fees for violation or non-compliance with Federal, State, Regional and local laws and regulations.

1.6 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office

that will review the submittal for the Government. The following shall be submitted in accordance with Section 01332 SUBMITTAL PROCEDURES:

Administrative Submittals

Environmental Protection Plan

1.7 CERTIFICATION REQUIREMENTS

An environmental agency may require design and construction documents to be certified by a Professional Engineer (PE) registered in the State of South Dakota. The Contractor shall comply with the certification requirements of the environmental regulatory agencies.

1.8 ENVIRONMENTAL COORDINATION, PERMITS, NOTICES, REVIEWS AND/OR APPROVALS

The Contractor shall be responsible for contacting the appropriate Federal, State, Regional, and local environmental agencies to identify all required environmental permits (construction and operating), notices, reviews, and approvals required for the project. Once the requirements are identified, the Contractor shall be responsible for coordinating the requirements with Ellsworth's Environmental Flight and the Contracting Officer in regard to implementation for a Federal Facility project. The Contractor shall ensure that all coordination, permits, notices, reviews and/or approvals are completed and submitted with each applicable phase of the design. Prior to construction starting for any phase, the Contractor shall assure that all permits and/or approvals are received and copies are submitted to the Contracting Officer. The Contractor shall be responsible for any contract delays resulting from failure to obtain environmental permits, notices, reviews and/or approvals when required.

1.8.1 Applications, Supporting Documents, and Fees

The Contractor shall obtain and complete all environmental permit applications and notices including any documents required for a modification for an existing permit held by the Facility. The Contractor is responsible for preparing all supporting documents, including but not limited to engineering reports, emission surveys, diagrams, pollutant load calculations, etc. If, in lieu of permits, the governing agency requires review and approval of the design, the Contractor shall submit and obtain approval of the design and associated documents. The Contractor shall be responsible for all fees associated with the permits, applications, reviews, approvals, and notices.

1.8.2 37th B-1B Squadron Operations Facility Environmental Permits, Notices, Reviews, and/or Approvals

The following is a listing of permits, notices, reviews, and/or approvals which **may be** required for this project. This listing and requirements are not to be considered all-inclusive by the Contractor, but is provided as information that may be used in successfully accomplishing the environmental compliances. See Internet site <http://www.state.sd.us/denr/ENVIRO/index.htm> for South Dakota's Environmental Permitting and Regulation Guide.

- a. The State of South Dakota has authority for the National Pollutant

Discharge Elimination System (NPDES) program. Ellsworth Air Force Base (EAFB) has been issued a South Dakota Department of Environmental and Natural Resources Authorization to Discharge Under the Surface Water Discharge System, Permit Number SD-0000281. This permit allows EAFB to discharge storm water from seven drainage systems across the base. The Storm Water Pollution Prevention Plan SWPPP is a requirement of this permit. The SWPPP may be reviewed at the Civil Engineer, Environmental Flight Office. The Contractor shall be responsible for coordination with the Environmental Flight for possible modifications to this permit for surface drainage discharges.

- b. If construction activities results in disturbance of 1 acre of land or more (sites that may be smaller than 1 acre but are part of common plan of development are considered to be over 1 acre), coverage under the State of South Dakota Department of Environment and Natural Resources' (SDENR), Authorization to Discharge Under the Surface Water Discharge System Permit #SDR100000 is required. If the current permit is revised by the State of South Dakota to requiring the permit for a project disturbing less than 1 acre, the Contractor shall be responsible for the applying for coverage under the permit. The Contractor shall be responsible for implementing the terms and requirements of the permit and shall be considered the "permittee". The Contractor shall complete and submit a Notice of Intent (NOI) and the Notice of Termination (NOT) in accordance with Permit #SDR100000 and shall be considered the "Facility Operator". The Contractor shall not begin construction until an authorization letter from the State granting coverage for the storm water discharges is received. The Contractor shall be responsible for posting a copy of the NOI and the authorization letter at the construction site in a prominent place for public viewing. The Contractor shall prepare and implement a Storm Water Pollution Prevention Plan, inspections, and reporting in accordance with the SD#100000. Any temporary or permanent erosion and sedimentation control measures shown on the drawings shall be incorporated into the Contractor's Storm Water Pollution Prevention Plan. The Contractor shall be responsible for assuring that their SWPPP is in accordance with EAFB's SWPPP (identified in the above paragraph). The Contractor shall retain copies of the storm water pollution prevention plan and all reports in accordance with the permit. All submissions to the State shall be by certified mail. The Contractor shall include copies of all submittals to the State of South Dakota, plans, and reports in the Appendix to the Environmental Protection Plan.
- c. No soil may be removed off-site without approval from EAFB Environmental Flight and the Contracting Officer.
- d. Drinking water, stormwater and sanitary sewer approval of plans and specifications is required by the State of South Dakota prior to construction commencing. These plans and specifications shall be sent to the South Dakota Department of Environment and Natural Resources (DENR) ATTN: Ray Birchem, Staff Engineer; Joe Foss Building; 523 East Capitol Avenue; Pierre, South Dakota, 57501; for review and approval. The plans and specifications shall be submitted with a cover letter requesting a review and approval. The plans and specifications are required to have a stamp and signature of a registered engineer from the State of South Dakota. A copy of the request shall be forwarded to the Ellsworth

Environmental Flight Office and the COR. The State of South Dakota may take up to 30 days for approval.

1.9 ENVIRONMENTAL PROTECTION PLAN

During the initial design phase, the Contractor shall submit an Environmental Protection Plan for compliance review and acceptance by the Contracting Officer. For each additional submittal phases, the plan shall be updated and submitted for compliance review and acceptance by the Contracting Officer. Prior to construction, the Contractor shall meet with the Contracting Officer for the purpose of discussing the implementation of the environmental plan, possible subsequent additions and revisions to the plan including any reporting requirements, and methods for administration of the Contractor's environmental plans. The Contractor shall maintain a current version of the Environmental Protection Plan on site for review by interested parties.

1.9.1 Compliance

No requirement in this Section shall be construed as relieving the Contractor of any applicable Federal, State, and local environmental protection laws and regulations. During Construction, the Contractor shall be responsible for identifying, submitting for compliance review, and implementing any additional requirements to be included in the Environmental Protection Plan.

1.9.2 Contents

The environmental protection plan shall include, but shall not be limited to, the following:

- a. Name(s) of person(s) within the Contractor's organization who is(are) responsible for ensuring adherence to the Environmental Protection Plan.
- b. Name(s) and qualifications of person(s) responsible for manifesting hazardous waste to be removed from the site, if applicable.
- c. Name(s) and qualifications of person(s) responsible for training the Contractor's environmental protection personnel.
- d. Description of the Contractor's environmental protection personnel training program.
- e. An erosion and sediment control plan which identifies the type and location of the erosion and sediment controls to be provided. The plan shall include monitoring and reporting requirements to assure that the control measures are in compliance with the erosion and sediment control plan, Federal, State, and local laws and regulations. A Storm Water Pollution Prevention Plan (SWPPP) may be substituted for this plan.
- f. Drawings showing locations of proposed temporary excavations or embankments for haul roads, stream crossings, material storage areas, structures, sanitary facilities, and stockpiles of excess or spoil materials including methods to control runoff and to contain materials on the site.
- g. Traffic control plans including measures to reduce erosion of

temporary roadbeds by construction traffic, especially during wet weather. Plan shall include measures to minimize the amount of mud transported onto paved public roads by vehicles or runoff.

h. Work area plan showing the proposed activity in each portion of the area and identifying the areas of limited use or nonuse. Plan should include measures for marking the limits of use areas including methods for protection of features to be preserved within authorized work areas.

i. Drawing showing the location of borrow areas.

j. The Spill Control plan shall include the procedures, instructions, and reports to be used in the event of an unforeseen spill of a substance regulated by 40 CFR 68, 40 CFR 302, 40 CFR 355, and/or regulated under State or Local laws and regulations. The Spill Control Plan supplements the requirements of EM 385-1-1 and Ellsworth AFB Spill Prevention and Control Counter-Measurement Plan SPCCP. This plan shall include as a minimum:

1. The name of the individual who will report any spills or hazardous substance releases and who will follow up with complete documentation. This individual shall immediately notify the Contracting Officer, Ellsworth AFB Fire Department, and Ellsworth AFB Environmental Flight in addition to the legally required Federal, State, and local reporting channels (including the National Response Center 1-800-424-8802) if a reportable quantity is released to the environment. The plan shall contain a list of the required reporting channels and telephone numbers.

2. The name and qualifications of the individual who will be responsible for implementing and supervising the containment and cleanup.

3. Training requirements for Contractor's personnel and methods of accomplishing the training.

4. A list of materials and equipment to be immediately available at the job site, tailored to cleanup work of the potential hazard(s) identified.

5. The names and locations of suppliers of containment materials and locations of additional fuel oil recovery, cleanup, restoration, and material-placement equipment available in case of an unforeseen spill emergency.

6. The methods and procedures to be used for expeditious contaminant cleanup.

k. A non-hazardous solid waste disposal plan identifying methods and locations for solid waste disposal including clearing debris. The plan shall include schedules for disposal. The Contractor shall identify any subcontractors responsible for the transportation and disposal of solid waste. Licenses or permits shall be submitted for solid waste disposal sites that are not a commercial operating facility. Evidence of the disposal facility's acceptance of the solid waste shall be attached to this plan during the construction. The Contractor shall attach a copy of each of the Non-hazardous Solid Waste Diversion Reports to the disposal plan. The report shall be submitted on the first working day after the first quarter that non-hazardous solid

waste has been disposed and/or diverted and shall be for the previous quarter (e.g. the first working day of January, April, July, and October). The report shall indicate the total amount of waste generated and total amount of waste diverted in cubic yards or tons along with the percent that was diverted.

l. A recycling and solid waste minimization plan with a list of measures to reduce consumption of energy and natural resources. The plan shall detail the Contractor's actions to comply with and to participate in Federal, State, Regional, and local government sponsored recycling programs to reduce the volume of solid waste at the source.

m. An air pollution control plan detailing provisions to assure that dust, debris, materials, trash, etc., do not become airborne and travel off the project site.

n. A contaminant prevention plan that: identifies potentially hazardous substances to be used on the job site; identifies the intended actions to prevent introduction of such materials into the air, water, or ground; and details provisions for compliance with Federal, State, and local laws and regulations for storage and handling of these materials. In accordance with EM 385-1-1, a copy of the Material Safety Data Sheets (MSDS) and the maximum quantity of each hazardous material to be on site at any given time shall be included in the contaminant prevention plan. As new hazardous materials are brought on site or removed from the site, the plan shall be updated. The Contractor shall furnish a copy of the initial and all updated contaminant prevention plans including each MSDS and quantities to Ellsworth AFB's Environmental Flight.

o. A waste water management plan that identifies the methods and procedures for management and/or discharge of waste waters which are directly derived from construction activities, such as concrete curing water, clean-up water, dewatering of ground water, disinfection water, hydrostatic test water, and water used in flushing of lines. If a settling/retention pond is required, the plan shall include the design of the pond including drawings, removal plan, and testing requirements for possible pollutants. If land application will be the method of disposal for the waste water, the plan shall include a sketch showing the location for land application along with a description of the pretreatment methods to be implemented. If surface discharge will be the method of disposal, a copy of the permit and associated documents shall be included as an attachment prior to discharging the waste water. If disposal is to a sanitary sewer, the plan shall include documentation that the Waste Water Treatment Plant Operator has approved the flow rate, volume, and type of discharge.

p. A historical, archaeological, cultural resources biological resources and wetlands plan that defines procedures for identifying and protecting historical, archaeological, cultural resources, biological resources and wetlands known to be on the project site: **and/or** identifies procedures to be followed if historical archaeological, cultural resources, biological resources and wetlands not previously known to be onsite or in the area are discovered during design or construction. The plan shall include methods to assure the protection of known or discovered resources and shall identify lines of communication between Contractor personnel and the Contracting Officer.

q. If applicable, a pesticide treatment plan shall be included and

updated, as information becomes available. The plan shall include: sequence of treatment, dates, times, locations, pesticide trade name, EPA registration numbers, authorized uses, chemical composition, formulation, original and applied concentration, application rates of active ingredient (i.e. pounds of active ingredient applied), equipment used for application and calibration of equipment. The Contractor is responsible for Federal, State, Regional and Local pest management record keeping and reporting requirements as well as any additional Installation specific requirements. The Contractor shall follow AFI 32-1053 Sections 3.4.13 and 3.4.14 for data required to be reported to the Installation.

1.9.3 Appendix

Copies of all environmental permits, permit application packages, approvals to construct, notifications, certifications, reports, and termination documents shall be attached, as an appendix, to the Environmental Protection Plan.

1.10 PROTECTION FEATURES

This paragraph supplements the Contract Clause PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES, AND IMPROVEMENTS. Prior to start of any onsite construction activities, the Contractor and the Contracting Officer shall make a joint condition survey. Immediately following the survey, the Contractor shall prepare a brief report including a plan describing the features requiring protection under the provisions of the Contract Clauses, which are not specifically identified on the drawings as environmental features requiring protection along with the condition of trees, shrubs and grassed areas immediately adjacent to the site of work and adjacent to the Contractor's assigned storage area and access route(s), as applicable. This survey report shall be signed by both the Contractor and the Contracting Officer upon mutual agreement as to its accuracy and completeness. The Contractor shall protect those environmental features included in the survey report and any indicated on the drawings, regardless of interference which their preservation may cause to the Contractor's work under the contract.

1.11 ENVIRONMENTAL ASSESSMENT OF CONTRACT DEVIATIONS

Any deviations, requested by the Contractor, from the drawings, plans and specifications which may have an environmental impact will be subject to approval by the Contracting Officer and may require an extended review, processing, and approval time. The Contracting Officer reserves the right to disapprove alternate methods, even if they are more cost effective, if the Contracting Officer determines that the proposed alternate method will have an adverse environmental impact.

1.12 NOTIFICATION

The Contracting Officer will notify the Contractor in writing of any observed noncompliance with Federal, State or local environmental laws or regulations, permits, and other elements of the Contractor's Environmental Protection plan. The Contractor shall, after receipt of such notice, inform the Contracting Officer of the proposed corrective action and take such action when approved by the Contracting Officer. The Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No time extensions shall be granted or equitable adjustments allowed to the Contractor for any such

suspensions. This is in addition to any other actions the Contracting Officer may take under the contract, or in accordance with the Federal Acquisition Regulation or Federal Law.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.1 LAND RESOURCES

The Contractor shall confine all activities to areas defined by the drawings and specifications. Prior to the beginning of any construction, the Contractor shall identify any land resources to be preserved within the work area. Except in areas indicated on the drawings or specified to be cleared, the Contractor shall not remove, cut, deface, injure, or destroy land resources including trees, shrubs, vines, grasses, topsoil, and land forms without approval. No ropes, cables, or guys shall be fastened to or attached to any trees for anchorage unless specifically authorized. The Contractor shall provide effective protection for land and vegetation resources at all times as defined in the following subparagraphs. Stone, soil, or other materials displaced into uncleared areas shall be removed by the Contractor.

3.1.1 Work Area Limits

Prior to commencing construction activities, the Contractor shall mark the areas that need not be disturbed under this contract. Isolated areas within the general work area which are not to be disturbed shall be marked or fenced. Monuments and markers shall be protected before construction operations commence. Where construction operations are to be conducted during darkness, any markers shall be visible in the dark. The Contractor's personnel shall be knowledgeable of the purpose for marking and/or protecting particular objects.

3.1.2 Landscape

Trees, shrubs, vines, grasses, land forms and other landscape features indicated and defined on the drawings to be preserved shall be clearly identified by marking, fencing, or wrapping with boards, or any other approved techniques. The Contractor shall restore landscape features damaged or destroyed during construction operations outside the limits of the approved work area.

3.1.3 Erosion and Sediment Controls

The Contractor shall be responsible for providing erosion and sediment control measures in accordance with Federal, State, and local laws and regulations. The erosion and sediment controls selected and maintained by the Contractor shall be such that water quality standards are not violated as a result of the Contractor's construction activities. The area of bare soil exposed at any one time by construction operations should be kept to a minimum. The Contractor shall construct or install temporary and permanent erosion and sediment control best management practices (BMPs). BMPs may include, but not be limited to, vegetation cover, stream bank stabilization, slope stabilization, silt fences, construction of terraces, interceptor channels, sediment traps, inlet and outfall protection, diversion channels, and sedimentation basins. Any temporary measures shall be removed after the area has been stabilized.

3.1.4 Contractor Facilities and Work Areas

The Contractor's field offices, staging areas, stockpile storage, and temporary buildings shall be placed in areas designated on the drawings or as directed by the Contracting Officer. Temporary movement or relocation of Contractor facilities shall be made only when approved. Erosion and sediment controls shall be provided for on-site borrow and spoil areas to prevent sediment from entering nearby waters. Temporary excavation and embankments for plant and/or work areas shall be controlled to protect adjacent areas.

3.2 WATER RESOURCES

The Contractor shall monitor construction activities to prevent pollution of surface and ground waters. Toxic or hazardous chemicals shall not be applied to soil or vegetation unless otherwise indicated. All water areas affected by construction activities shall be monitored by the Contractor. For construction activities immediately adjacent to impaired surface waters, the Contractor shall be capable of quantifying sediment or pollutant loading to that surface water when required by State or Federally issued Clean Water Act permits.

3.2.1 Wetlands

The Contractor shall not enter, disturb, destroy, or allow discharge of contaminants into any wetlands.

3.3 AIR RESOURCES

Equipment operation, activities, or processes performed by the Contractor shall be in accordance with all Federal and State air emission and performance laws and standards.

3.3.1 Particulates

Dust particles; aerosols and gaseous by-products from construction activities; and processing and preparation of materials, such as from asphaltic batch plants; shall be controlled at all times, including weekends, holidays and hours when work is not in progress. The Contractor shall maintain excavations, stockpiles, haul roads, permanent and temporary access roads, plant sites, spoil areas, borrow areas, and other work areas within or outside the project boundaries free from particulates which would cause the Federal, State, and local air pollution standards to be exceeded or which would cause a hazard or a nuisance. Sprinkling, chemical treatment of an approved type, baghouse, scrubbers, electrostatic precipitators or other methods will be permitted to control particulates in the work area. Sprinkling, to be efficient, must be repeated to keep the disturbed area damp at all times. The Contractor must have sufficient, competent equipment available to accomplish these tasks. Particulate control shall be performed as the work proceeds and whenever a particulate nuisance or hazard occurs. The Contractor shall comply with all State and local visibility regulations.

3.3.2 Odors

Odors from construction activities shall be controlled at all times. The odors shall not cause a health hazard and shall be in compliance with State regulations and/or local ordinances.

3.3.3 Sound Intrusions

The Contractor shall keep construction activities under surveillance and control to minimize environment damage by noise.

3.3.4 Burning

Burning shall be prohibited on the Government premises.

3.4 CHEMICAL MATERIALS MANAGEMENT AND WASTE DISPOSAL

Disposal of wastes shall be as directed below, unless otherwise specified in other sections and/or shown on the drawings.

3.4.1 Solid Wastes

Solid wastes (excluding clearing debris) shall be placed in containers which are emptied on a regular schedule. Handling, storage, and disposal shall be conducted to prevent contamination. Segregation measures shall be employed so that no hazardous or toxic waste will become co-mingled with solid waste. The Contractor shall transport solid waste off Government property and dispose of it in compliance with Federal, State, and local requirements for solid waste disposal. A Subtitle D RCRA permitted landfill shall be the minimum acceptable off-site solid waste disposal option. The Contractor shall verify that the selected transporters and disposal facilities have the necessary permits and licenses to operate.

3.4.2 Chemicals and Chemical Wastes

Chemicals shall be dispensed ensuring no spillage to the ground or water. Periodic inspections of dispensing areas to identify leakage and initiate corrective action shall be performed and documented. This documentation will be periodically reviewed by the Government. Chemical waste shall be collected in corrosion resistant, compatible containers. Collection drums shall be monitored and removed to a staging or storage area when contents are within 6 inches of the top. Wastes shall be classified, managed, stored, and disposed of in accordance with Federal, State, and local laws and regulations. All hazardous materials brought on the facility shall be bar coded and tracked by the Ellsworth AFB's HAZMART. The Contractor shall contact the HAZMART office prior to hazardous materials being brought on the facility to arrange for on-site bar coding and tracking by the HAZMART office.

3.4.3 Contractor Generated Hazardous Wastes/Excess Hazardous Materials

Hazardous wastes are defined in 40 CFR 261, or are as defined by applicable State and local regulations. Hazardous materials are defined in 49 CFR 171 - 178. The Contractor shall, at a minimum, manage and store hazardous waste in compliance with 40 CFR 262 and shall manage and store hazardous waste in accordance with the Installation hazardous waste management plan. The Contractor shall take sufficient measures to prevent spillage of hazardous and toxic materials during dispensing. The Contractor shall segregate hazardous waste from other materials and wastes, shall protect it from the weather by placing it in a safe covered location, and shall take precautionary measures such as berming or other appropriate measures against accidental spillage. The Contractor shall be responsible for storage, describing, packaging, labeling, marking, and placarding of hazardous waste and hazardous material in accordance with 49 CFR 171 - 178, State, and local laws and regulations. The Contractor shall contact

Ellsworth AFB's HAZMART office to arrange for acceptance of any Contractor generated hazardous waste. No hazardous waste will be taken off the facility by the Contractor. Unused or partially used containers of hazardous materials (i.e., paint, adhesives) are not hazardous waste and will be taken off the facility for reuse by the Contractor. Spills of hazardous or toxic materials shall be immediately reported to the Contracting Officer. Cleanup and cleanup costs due to spills shall be the Contractor's responsibility. The disposition of Contractor generated hazardous waste and excess hazardous materials are the Contractor's responsibility.

3.4.4 Fuel and Lubricants

Storage, fueling and lubrication of equipment and motor vehicles shall be conducted in a manner that affords the maximum protection against spill and evaporation. Fuel, lubricants and oil shall be managed and stored in accordance with all Federal, State, Regional, and local laws and regulations. Used lubricants and used oil to be discarded shall be stored in marked corrosion-resistant containers and recycled or disposed in accordance with 40 CFR 279, State, and local laws and regulations. There shall be no storage of fuel on the project site. Fuel must be brought to the project site each day that work is performed.

3.4.5 Waste Water

Disposal of waste water shall be as specified below.

- a. Waste water from construction activities, such as onsite material processing, concrete curing, foundation and concrete clean-up, water used in concrete trucks, forms, etc. shall not be allowed to enter water ways or to be discharged prior to being treated to remove pollutants. The Contractor shall dispose of the construction related waste water off-Government property in accordance with all Federal, State, Regional and Local laws and regulations.
- b. Ground water shall not be pumped or discharged without prior approval from the Contracting Officer.
- c. Water generated from the flushing of lines after disinfection or disinfection in conjunction with hydrostatic testing shall be land applied in accordance with all Federal, State, and local laws and regulations for land application or discharged into the sanitary sewer with prior approval and/or notification to the Waste Water Treatment Plant's Operator.

3.5 RECYCLING AND WASTE MINIMIZATION

The Contractor shall participate in State and local government sponsored recycling programs. The Contractor is further encouraged to minimize solid waste generation throughout the duration of the project.

3.6 NON-HAZARDOUS SOLID WASTE DIVERSION REPORT

The Contractor shall maintain an inventory of non-hazardous solid waste diversion and disposal of construction and demolition debris. The Contractor shall submit a report to Ellsworth AFB's Environmental Flight through the Contracting Officer on the first working day after each fiscal year quarter, starting the first quarter that non-hazardous solid waste has

been generated. The following shall be included in the report:

- a. Construction and Demolition (C&D) Debris Disposed = _____ in cubic yards or tons, as appropriate.
- b. Construction and Demolition (C&D) Debris Recycled = _____ in cubic yards or tons, as appropriate.
- c. Total C&D Debris Generated = _____ in cubic yards or tons, as appropriate.
- d. Waste Sent to Waste-To-Energy Incineration Plant (This amount should not be included in the recycled amount) = _____ in cubic yards or tons, as appropriate.

3.7 HISTORICAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES

If during excavation or other construction activities any previously unidentified or unanticipated historical, archaeological, and cultural resources are discovered or found, all activities that may damage or alter such resources shall be temporarily suspended. Resources covered by this paragraph include but are not limited to: any human skeletal remains or burials; artifacts; shell, midden, bone, charcoal, or other deposits; rock or coral alignments, pavings, wall, or other constructed features; and any indication of agricultural or other human historical activities. Upon such discovery or find, the Contractor shall immediately notify the Contracting Officer so that the appropriate authorities may be notified and a determination made as to their significance and what, if any, special disposition of the finds should be made. The Contractor shall cease all activities that may result in impact to or the destruction of these resources. The Contractor shall secure the area and prevent employees or other persons from trespassing on, removing, or otherwise disturbing such resources.

3.8 BIOLOGICAL RESOURCES

The Contractor shall minimize interference with, disturbance to, and damage to fish, wildlife, and plants including their habitat. The Contractor shall be responsible for the protection of threatened and endangered animal and plant species including their habitat in accordance with Federal, State, Regional, and local laws and regulations.

3.9 INTEGRATED PEST MANAGEMENT

In order to minimize impacts to existing fauna and flora, the Contractor, through the Contracting Officer, shall coordinate with the Installation Pest Management Coordinator (IPMC) at the earliest possible time prior to pesticide application. The Contractor shall discuss integrated pest management strategies with the IPMC and receive concurrence from the IPMC through the COR prior to the application of any pesticide associated with these specifications. Installation Pest Management personnel shall be given the opportunity to be present at all meetings concerning treatment measures for pest or disease control and during application of the pesticide. The use and management of pesticides are regulated under 40 CFR 152 - 186.

3.9.1 Pesticide Delivery and Storage

Pesticides shall be delivered to the site in the original, unopened

containers bearing legible labels indicating the EPA registration number and the manufacturer's registered uses. Pesticides shall be stored according to manufacturer's instructions and under lock and key when unattended.

3.9.2 Qualifications

For the application of pesticides, the Contractor shall use the services of a subcontractor whose principal business is pest control. The subcontractor shall be licensed and certified in the state where the work is to be performed.

3.9.3 Pesticide Handling Requirements

The Contractor shall formulate, treat with, and dispose of pesticides and associated containers in accordance with label directions and shall use the clothing and personal protective equipment specified on the labeling for use during all phases of the application. Material Safety Data Sheets (MSDS) shall be available for all pesticide products.

3.9.4 Application

Pesticides shall be applied by a State Certified Pesticide Applicator in accordance with EPA label restrictions and recommendation. The Certified Applicator shall wear clothing and personal protective equipment as specified on the pesticide label. Water used for formulating shall only come from locations designated by the Contracting Officer. The Contractor shall not allow the equipment to overflow. Prior to application of pesticide, all equipment shall be inspected for leaks, clogging, wear, or damage and shall be repaired prior to being used.

3.10 PREVIOUSLY USED EQUIPMENT

The Contractor shall clean all previously used construction equipment prior to bringing it onto the project site. The Contractor shall ensure that the equipment is free from soil residuals, egg deposits from plant pests, noxious weeds, and plant seeds. The Contractor shall consult with the USDA jurisdictional office for additional cleaning requirements.

3.11 MAINTENANCE OF POLLUTION FACILITIES

The Contractor shall maintain permanent and temporary pollution control facilities and devices for the duration of the contract or for that length of time construction activities create the particular pollutant.

3.12 MILITARY MUNITIONS

In the event the Contractor discovers or uncovers military munitions as defined in 40 CFR 260, the Contractor shall immediately stop work in that area and immediately inform the Contracting Officer.

3.13 TRAINING OF CONTRACTOR PERSONNEL

The Contractor's personnel shall be trained in all phases of environmental protection and pollution control. The Contractor shall conduct environmental protection/pollution control meetings for all Contractor personnel prior to commencing construction activities. The Contractor shall document all attendances with date of attendance for all meetings held. Additional meetings shall be conducted for new personnel and when site

conditions change. The training and meeting agenda shall include: methods of detecting and avoiding pollution; familiarization with statutory and contractual pollution standards; installation and care of devices, vegetative covers, and instruments required for monitoring purposes to ensure adequate and continuous environmental protection/pollution control; anticipated hazardous or toxic chemicals or wastes, and other regulated contaminants; recognition and protection of archaeological sites, artifacts, wetlands, and endangered species and their habitat that are known to be in the area.

3.14 POST CONSTRUCTION CLEANUP

The Contractor shall clean up all areas used for construction in accordance with Contract Clause: "Cleaning Up". The Contractor shall, unless otherwise instructed in writing by the Contracting Officer, obliterate all signs of temporary construction facilities such as haul roads, work area, structures, foundations of temporary structures, stockpiles of excess or waste materials, and other vestiges of construction prior to final acceptance of the work. The disturbed area shall be graded, filled and the entire area seeded unless otherwise indicated.

-- End of Section --

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SECTION 01356

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11/01

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SECTION 01356

STORM WATER POLLUTION PREVENTION MEASURES
11/01

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

ASTM INTERNATIONAL (ASTM)

ASTM D 448 (1998) Sizes of Aggregate for Road and Bridge Construction

ASTM D 4873 (2002) Identification, Storage, and Handling of Geosynthetic Rolls and Samples

AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
(AASHTO)

AASHTO M 288 (2000) Geotextile for Highway Applications

1.2 GENERAL

The Contractor shall implement the storm water pollution prevention measures specified in this section in a manner which will meet the requirements of Section 01355 ENVIRONMENTAL PROTECTION, and the requirements of the National Pollution Discharge Elimination System (NPDES) permit specified in Section 01561 NPDES PERMIT REQUIREMENTS FOR STORM WATER DISCHARGES FROM CONSTRUCTION SITES.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-07 Certificates

Mill Certificate or Affidavit

1.4 EROSION AND SEDIMENT CONTROLS

The controls and measures required by the Contractor are described in the Storm Water Pollution Prevention Plans (SWPPP) attached to Section 01561 NPDES PERMIT REQUIREMENTS FOR STORM WATER DISCHARGES FROM CONSTRUCTION SITES.

1.4.1 Stabilization Practices

The stabilization practices to be implemented may include temporary seeding, mulching, sod stabilization, vegetative buffer strips, erosion control blankets, protection of trees, preservation of mature vegetation, etc. On his daily CQC Report, the Contractor shall record the dates when the major grading activities occur; when construction activities temporarily or permanently cease on a portion of the site; and when stabilization practices are initiated.

1.4.1.1 Permanent Seeding

Disturbed areas of the site where construction activities permanently ceases shall be stabilized with permanent seeding no more than 14 days after the construction activity ceases, except as follows. When the initiation of permanent seeding is stopped due to snow cover or arid conditions, permanent seeding shall be initiated as soon as practicable.

1.4.1.2 Temporary Seeding and Mulching

Areas where construction activities will temporarily cease for more than one year shall be temporarily seeded and mulched. Disturbed areas of the site where construction activities temporarily cease for more than 21 days and less than one year shall be stabilized with either temporary seeding and mulching or mulching not more than 14 days after construction activity ceases, except as follows. When the initiation of temporary stabilization measures is stopped due to snow cover or arid conditions, stabilization measures shall be initiated as soon as practicable.

1.4.1.3 Erosion Control Blankets

Erosion control blanket may be installed on steep slopes and in drainage swales and ditches to protect finished grades from erosion.

1.4.2 Temporary Structural Practices

Temporary structural practices shall be implemented to divert flows from exposed soils, temporarily store flows, or otherwise limit runoff and the discharge of pollutants from exposed areas of the site to the degree attainable. Temporary structural practices shall be implemented in a timely manner during the construction process to minimize erosion and sediment runoff. Temporary structural practices shall include but not be limited to the following devices.

1.4.2.1 Silt Fences

The Contractor shall provide silt fences as a temporary structural practice to minimize erosion and sediment runoff. Silt fences shall be properly installed to effectively retain sediment immediately after completing each phase of work where erosion would occur in the form of sheet and rill erosion (e.g. clearing and grubbing, excavation, embankment, and grading). Silt fence barriers shall be installed along the down slope boundary of all disturbed areas prior to beginning land-disturbing activities in those areas. Silt fence barriers may be installed across ditches or swales but not where the drainage area is greater than 1 acre. Removal of silt fence barriers shall be approved by the Contracting Officer.

1.4.2.2 Storm Drain Inlet Protection

Storm drain inlet protection shall be installed at each new and existing inlet which receives storm runoff from disturbed areas of 1 acre or less.

The protection at each inlet shall be removed once the disturbed area has been finally stabilized.

1.4.2.3 Culvert Inlet Protection

Culvert inlet protection shall be installed at all culverts with a drainage area of 1 acre or less.

1.4.2.4 Rock Check Dams

Rock check dams may be used to reduce erosion of temporary or permanent ditches or swales. Type 1 rock check dams shall be used when the upstream drainage area is less than 2 acres. Type 2 rock check dams shall be used when the upstream area is 2 to 10 acres.

1.4.2.5 Stone Construction Entrance

A stone construction entrance shall be constructed wherever traffic will be leaving the construction site and move directly onto a paved road. Stone construction entrances shall be removed after the site has been finally stabilized.

1.4.2.6 Sediment Trap

Sediment traps may be constructed below disturbed areas where the total contributing drainage area is less than 3 acres. Sediment traps, when used, should be constructed prior to disturbance of upslope areas. Sediment traps must have an initial storage volume of 134 cubic yards per acre of drainage area, half of which shall be in the form of a permanent pool or wet storage to provide a stable settling medium. The remaining half shall be in the form of a drawdown or dry storage which will provide extended settling time during less frequent, larger storm events.

1.4.2.7 Diversion Dikes

Diversion dikes may be constructed to divert runoff from upslope drainage areas away from unprotected disturbed areas and slopes to a stabilized outlet or to divert sediment-laden runoff from a disturbed area to a sediment-trapping facility such as a sediment trap or sediment basin. Diversion dikes shall have a maximum channel slope of 2 percent and shall be adequately compacted to prevent failure. The minimum height measured from the top of the dike to the bottom of the channel shall be 18 inches. The minimum base width shall be 6 feet and the minimum top width shall be 2 feet. The Contractor shall ensure that the diversion dikes are not damaged by construction operations or traffic.

PART 2 PRODUCTS

2.1 COMPONENTS FOR SILT FENCES

2.1.1 Geotextile

The geotextile shall comply with the requirements of AASHTO M 288 for temporary silt fence.

2.1.2 Silt Fence Stakes and Posts

The Contractor may use either wooden stakes or steel posts for fence construction. Wooden stakes utilized for silt fence construction, shall

have a minimum cross section of 2 inches by 2 inches when oak is used and 4 inches by 4 inches when pine is used, and shall have a minimum length of 3 feet. Steel posts (standard "U" or "T" section) utilized for silt fence construction, shall have a minimum weight of 1.33 pounds per linear foot and a minimum length of 5 feet.

2.1.3 Mill Certificate or Affidavit

A mill certificate or affidavit shall be provided attesting that the geotextile and factory seams meet chemical, physical, and manufacturing requirements specified above. The mill certificate or affidavit shall specify the actual Minimum Average Roll Values and shall identify the fabric supplied by roll identification numbers. The Contractor shall submit a mill certificate or affidavit signed by a legally authorized official from the company manufacturing the geotextile.

2.1.4 Identification Storage and Handling

Geotextile shall be identified, stored and handled in accordance with ASTM D 4873.

2.1.5 Support Mesh

Support mesh shall be 14-1/2 gage or heavier steel wire with a mesh spacing of 6 by 6 inch or a prefabricated polymeric mesh of equivalent strength.

2.2 Erosion Control Blankets

Erosion control blankets shall be a machine-produced mat with a biodegradable agricultural straw matrix (approximately 0.50 lb/sq yd) and photodegradable netting on each side. The blanket shall be sewn together with degradable thread. Installation staple patterns shall be clearly marked on the erosion control blanket with environmentally safe paint.

2.3 COMPONENTS FOR SEDIMENT TRAP

Coarse aggregate shall conform to ASTM D 448, Size 3, 357, or 5. Minor variations from the gradations specified will be permitted. Stone for riprap shall consist of field stone or rough unhewn quarry stone of approximately rectangular shape. The stone shall be hard and angular and of such quality that it will not disintegrate on exposure to water or weathering. The specific gravity of individual stones shall be at least 2.5. Riprap stones shall weigh between 50 and 150 pounds each, except that approximately 10 percent may weigh 50 pounds or less. At least 60 percent shall weight more than 100 pounds. Geotextile shall conform to paragraph GEOTEXTILES.

2.4 COMPONENTS FOR INLET PROTECTION

Aggregates for gravel filter should be sized to get the greatest amount of filtering action possible (by using smaller-sized stone), while not creating significant ponding problems.

2.5 STONE CONSTRUCTION ENTRANCE

Aggregate for construction entrance shall conform to ASTM D 448, Size 1. Minor variations from the gradation specified will be permitted. Geotextile shall conform to paragraph GEOTEXTILES.

2.6 ROCK CHECK DAMS

Coarse aggregate shall conform to ASTM D 448 size number 1 or approved equal. Riprap shall consist of field stone or rough unhewn quarry stone of approximately rectangular shape. Riprap shall be hard and angular. The specific gravity of individual stones shall be at least 2.5. Concrete rubble may be used provided it has a density of at least 150 pcf. Individual stones shall have a weight of 50 to 150 lbs except that a maximum of 10 percent of stone may weigh less than 50 lbs. At least 60 percent of stones shall weigh more than 100 lbs.

2.7 GEOTEXTILES

Geotextile for other than silt fence shall comply with the requirements of AASHTO M 288 for a separation geotextile.

PART 3 EXECUTION

3.1 INSTALLATION OF SILT FENCES

Silt fences shall extend a minimum of 16 inches above the ground surface and shall not exceed 34 inches above the ground surface. Filter fabric shall be from a continuous roll cut to the length of the barrier to avoid the use of joints. When joints are unavoidable, filter fabric shall be spliced together at a support post, with a minimum 6 inch overlap, and securely sealed. A trench shall be excavated approximately 6 inches wide and 8 inches deep on the upslope side of the location of the silt fence. The 6-inch by 8-inch trench shall be backfilled and the soil compacted over the filter fabric. Silt fences shall be removed upon approval by the Contracting Officer.

3.2 Sediment Trap

The area under the embankment shall be cleared, grubbed, and stripped of any vegetation and root mat. Fill material for the embankment shall be placed in accordance with Section 02300 EARTHWORK. A geotextile shall be placed between the riprap and subgrade.

3.3 Stone Construction Entrance

The area of the entrance shall be cleared of all vegetation, roots, and other objectionable material. The aggregate layer shall have a minimum total thickness of 6 inches. A geotextile shall be placed beneath aggregate for the full width and length of the entrance. A minimum of 3 inches of the aggregate shall be placed in a cut section to provide stability and secure the geotextile. If conditions on the site are such that the majority of the mud is not removed by the vehicles traveling over the stone, then the tires of the vehicles shall be washed before entering the road. Wash water must be carried away from the entrance to an approved settling area to remove sediment. A wash rack may also be installed for washing of vehicles.

3.4 MAINTENANCE

The Contractor shall maintain the temporary and permanent vegetation, erosion and sediment control measures, and other protective measures in good and effective operating condition by performing routine inspections to determine condition and effectiveness, by restoration of destroyed vegetative cover, and by repair of erosion and sediment control measures

and other protective measures. Maintenance of protective measures shall conform to the requirements in the SWPPP.

3.4.1 Silt Fences

Silt fences shall be inspected in accordance with paragraph INSPECTIONS. Any required repairs shall be made promptly. Close attention shall be paid to the repair of damaged silt fence resulting from end runs and undercutting. Should the fabric on a silt fence decompose or become ineffective, and the barrier is still necessary, the fabric shall be replaced promptly. Sediment deposits shall be removed when deposits reach one-third of the height of the barrier. When a silt fence is no longer required, it shall be removed. The immediate area occupied by the fence and any sediment deposits shall be shaped to an acceptable grade. The areas disturbed by this shaping shall be seeded in accordance with Section 02921 SEEDING.

3.4.2 Storm Drain Inlet Protection

Inlet protection structures shall be inspected after each rainfall and repairs made as needed. Sediment shall be removed and the trap restored to its original dimensions when the sediment has accumulated to one half the design depth.

3.4.3 Rock Check Dams

Check dams should be checked for sediment after each runoff-producing storm event. Sediment should be removed when it reaches one half the original height of the measure.

3.4.4 Stone Construction Entrance

Stone construction entrances shall be maintained in a condition which will prevent tracking or flow of mud onto paved roads. This may require periodic top dressing with additional stone or the washing and reworking of existing stone as conditions demand and repair and/or cleanout of any structures used to trap sediment. The use of water trucks to remove materials dropped, washed, or tracked onto roadways will not be permitted under any circumstances.

3.4.5 Sediment Traps

Sediment shall be removed and the trap restored to its original dimensions when the sediment has accumulated to one half the design volume of the wet storage. Filter stone shall be regularly checked to ensure that filtration performance is maintained. Stone choked with sediment shall be removed and cleaned or replaced. The structure should be inspected regularly to ensure that it is structurally sound and has not been damaged by erosion or construction equipment. The height of the stone outlet should be inspected to ensure that its center is at least 1 foot below the top of the embankment.

3.4.6 Diversion Dikes

Diversion dikes shall be inspected in accordance with paragraph INSPECTIONS. Close attention shall be paid to the repair of damaged diversion dikes and necessary repairs shall be accomplished promptly. When diversion dikes are no longer required, they shall be shaped to an acceptable grade. The areas disturbed by this shaping shall be seeded in

accordance with Section 02921 SEEDING.

3.5 INSPECTIONS

3.5.1 General

The Contractor shall inspect disturbed areas of the construction site, areas used for storage of materials that are exposed to precipitation that have not been finally stabilized, stabilization practices, structural practices, other controls, and area where vehicles exit the site at least once every seven (7) calendar days and within 24 hours of the end of any storm that produces 0.5 inches or more rainfall at the site. Where sites have been finally stabilized, such inspection shall be conducted at least once every month. Inspection of protective measures shall conform to the requirements in the SWPPP.

3.5.2 Inspections Details

Disturbed areas and areas used for material storage that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. Erosion and sediment control measures shall be observed to ensure that they are operating correctly. Discharge locations or points shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters. Locations where vehicles exit the site shall be inspected for evidence of offsite sediment tracking.

3.5.3 Inspection Reports

For each inspection conducted, the Contractor shall prepare a report summarizing the scope of the inspection, name(s) of personnel making the inspection, the date(s) of the inspection, major observations relating to the implementation of the storm water pollution prevention measures, maintenance performed, and actions taken. The report shall be furnished to the Contracting Officer within 24 hours of the inspection as a part of the Contractor's daily CQC REPORT.

-- End of Section --

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SECTION 01400

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SPECIAL SAFETY REQUIREMENTS
05/00 Rev 02/03

1.1 REFERENCES

CODE OF FEDERAL REGULATIONS (CFR)

ENGINEERING MANUALS (EM)

1.2 SUMMARY

1.2.1 General

http://www.hq.usace.army.mil/soh/hqusace_soh.htm ("Changes to EM"). U.S. Government bookstores are located in most major cities including Milwaukee, Chicago, Kansas City, Denver, and Pueblo, Colorado.

1.2.2 Description of Work

37th B-1B Squadron Operations Facility, Ellsworth AFB, South Dakota.

1.3 PRECONSTRUCTION CONFERENCE

See Contract Clause "PRECONSTRUCTION CONFERENCE". A preconstruction conference will be scheduled prior to beginning of site work. Requirements relative to planning and administration of the overall safety program will be discussed.

1.4 SUBMITTALS

Government approval is required for submittals with a "G" designation;

submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330SUBMITTAL PROCEDURES:

Administrative Submittals

Accident Prevention Plan;

The written site-specific Accident Prevention Plan.

1.5 ACCIDENT PREVENTION PLAN

The Contractor shall submit, prior to the start of on site construction activity, a proposed accident prevention plan which shall be the accident prevention policy to be followed by all of the Contractor's and subcontractor's personnel and supervisory staff during performance of the work.

1.5.1 Requirements

The proposed plan shall be developed after a careful analysis of the work involved and shall be tailored specifically to the conditions of this project. The Contractor's accident prevention plan shall contain, as a minimum, the following general information or procedures for the activity indicated. The Contractor shall submit his plan for review and acceptance prior to commencing work.

1.5.1.1 Responsible Individual(s)

The Contractor shall designate an onsite employee as the individual responsible for insuring the accident prevention plan is implemented and enforced.

1.5.1.2 Subcontractor Supervision

Explain procedures to assure that subcontractor(s) fully comply with the accident prevention plan.

1.5.1.3 Indoctrination of New Employees

The plan shall include provisions for advising workers of the purpose of the accident prevention plan, specific hazards on the job and precautions to be taken, emergency procedures, information concerning tool box safety meetings, required protective equipment, cleanup rules and location of company safety rules (posting or handout).

1.5.1.4 Tool Box Safety Meetings

Hold weekly "Tool Box" safety meetings. Timely safety subjects shall be determined by a responsible individual. Employees will be informed of time, location, who will conduct, and subject. Identify procedures for including subcontractors. The Contractor shall provide a copy of the Weekly Tool Box Meeting and Monthly Supervisor's Safety Meeting to the Contracting Officer.

1.5.1.5 Fire Prevention and Protection

Identify source of fire protection. Insure adequate fire extinguishers,

water barrels, or other fire-fighting equipment is located on site. Explain prevention activities to include storage areas and special hazards such as welding and use of flammable liquids, and other special hazards.

1.5.1.6 Housekeeping

Daily cleanup of all debris and waste materials is required. Adequate disposal containers should be placed strategically around the site. Debris shall be removed on a regular basis. Explain procedures that include use of barrels, dumpsters, trash chutes, etc.

1.5.1.7 Mechanical Equipment Inspection

All mechanical equipment (trucks, cranes, forklifts, backhoes, graders, etc.) shall be inspected prior to use and at fixed intervals throughout the life of the contract. Explain how inspections will be accomplished (frequency, by whom, and records to be kept).

1.5.1.8 First Aid and Medical Facilities

First aid facilities shall be made available on the job site. Arrangements for emergency medical attention shall be made prior to start of work. All emergency numbers (doctor, hospital, ambulance, fire department) shall be posted at the project superintendent's office.

1.5.1.9 Sanitation

Include provisions for toilet facilities, drinking water and washing facilities. A sufficient number of toilet facilities as specified in EM 385-1-1 shall be provided unless permission is granted to use existing facilities (portable chemical are authorized). Insure safe drinking water and individual cups are available. For the projects where corrosive or toxic materials are used, separate washing facilities are required.

1.5.1.10 Safety Promotions

The Contractor shall promote accident prevention. Identify method (posters, awards etc.).

1.5.1.11 Accident Reporting

All accidents (employee injuries, vehicle, building, or equipment damage etc.) regardless of their severity, shall be reported to the onsite government representative or to the area engineer, who in turn will advise the Contractor of forms to be submitted and timeframes.

1.5.1.12 Job Hazard Analysis

When job situations change and it is necessary to alter safety requirements, a Job Hazard Analysis will be accomplished, documented, and added as an addendum to the Accident Prevention Plan. Each Job Hazard Analysis shall include, but not be limited to, a description of the work, probable hazards related to that work and positive precautionary measures to be taken to reduce or eliminate each hazard. An example of changing situations may be new subcontractors performing work such as earth moving, trenching, concrete work, roofing, electrical, masonry etc. The onsite government representative will determine the format and amount of detail required of the written plan.

1.6 RADIOLOGICAL EQUIPMENT

In addition to any applicable Nuclear Regulatory Commission, state, local, or other federal licenses or permits, and in accordance with requirements of EM 385-1-1, Safety and Health Requirement Manual, the Contractor is required to obtain a service permit to use, store, operate, or handle a radiation producing machine or radioactive materials on a Department of Defense (DOD) Installation. The service permit shall be obtained from the appropriate U.S. Army or U.S. Air Force Command through the Contracting Officer's representative. The Contractor should notify the Contracting Officer during the prework conference if a radiation producing device will be utilized on a DOD Installation in order to determine the permit application requirements, and allow a lead time of 45 days for obtaining a permit.

1.7 EXCAVATION AND TRENCHING

The standards for excavation and trenching are outlined in 29 CFR 1926, Subpart P. These standards shall be followed in addition to those outlined in EM 385-1-1.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION (NOT APPLICABLE)

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SECTION 01451A

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1/03; Omaha Revision 2/03

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SECTION 01451A

CONTRACTOR QUALITY CONTROL
1/03; Omaha Revision 2/03

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

ASTM INTERNATIONAL (ASTM)

ASTM D 3740	(2001) Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction
ASTM E 329	(2002) Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction

ENGINEERING REGULATIONS (ER)

ER 1110-1-12	(1 June 1993) Engineering and Design - Quality Management
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1.2 PAYMENT

Separate payment will not be made for providing and maintaining an effective Quality Control program, and all costs associated therewith shall be included in the applicable unit prices or lump-sum prices contained in the Pricing Schedule.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

The Contractor is responsible for quality control and shall establish and maintain an effective quality control system in compliance with the Contract Clause titled "Inspection of Construction." The quality control system shall consist of plans, procedures, and organization necessary to produce an end product which complies with the contract requirements. The system shall cover all design and construction operations, both onsite and offsite, and shall be keyed to the proposed construction sequence. The site project superintendent will be held responsible for the quality of work on the job and is subject to removal by the Contracting Officer for non-compliance with the quality requirements specified in the contract. The site project superintendent in this context shall be the highest level manager responsible for the overall construction activities at the site, including quality and production. The site project superintendent shall

maintain a physical presence at the site at all times, except as otherwise acceptable to the Contracting Officer, and shall be responsible for all construction and construction related activities at the site.

3.2 QUALITY CONTROL PLAN

The Contractor shall furnish for review by the Government, not later than 10 days after receipt of notice to proceed, the Contractor Quality Control (CQC) Plan proposed to implement the requirements of the Contract Clause titled "Inspection of Construction." The plan shall identify personnel, procedures, control, instructions, tests, records, and forms to be used. The Government will consider an interim plan for the first 30 days of operation. Design and construction will be permitted to begin only after acceptance of the CQC Plan or acceptance of an interim plan applicable to the particular feature of work to be started. Work outside of the features of work included in an accepted interim plan will not be permitted to begin until acceptance of a CQC Plan or another interim plan containing the additional features of work to be started.

3.2.1 Content of the CQC Plan

The CQC Plan shall include, as a minimum, the following to cover all design and construction operations, both onsite and offsite, including work by subcontractors, designers of record, consultants, architect/engineers (AE), fabricators, suppliers, and purchasing agents:

- a. A description of the quality control organization, including a chart showing lines of authority and acknowledgment that the CQC staff shall implement the three phase control system for all aspects of the work specified. The staff shall include a CQC System Manager who shall report to the project superintendent.
- b. The name, qualifications (in resume format), duties, responsibilities, and authorities of each person assigned a CQC function.
- c. A copy of the letter to the CQC System Manager signed by an authorized official of the firm which describes the responsibilities and delegates sufficient authorities to adequately perform the functions of the CQC System Manager, including authority to stop work which is not in compliance with the contract. The CQC System Manager shall issue letters of direction to all other various quality control representatives outlining duties, authorities, and responsibilities. Copies of these letters shall also be furnished to the Government.
- d. Procedures for scheduling, reviewing, certifying, and managing submittals, including those of subcontractors, designers of record, consultants, architect engineers (AE), offsite fabricators, suppliers, and purchasing agents. These procedures shall be in accordance with Section 01330 SUBMITTAL PROCEDURES.
- e. Control, verification, and acceptance testing procedures for each specific test to include the test name, specification paragraph requiring test, feature of work to be tested, test frequency, and person responsible for each test. (Laboratory facilities approved by the Contracting Officer shall be used.)

- f. Procedures for tracking preparatory, initial, and follow-up control phases and control, verification, and acceptance tests including documentation.
- g. Procedures for tracking design and construction deficiencies from identification through acceptable corrective action. These procedures shall establish verification that identified deficiencies have been corrected.
- h. Reporting procedures, including proposed reporting formats.
- i. A list of the definable features of work. A definable feature of work is a task which is separate and distinct from other tasks, has separate control requirements, and may be identified by different trades or disciplines, or it may be work by the same trade in a different environment. Although each section of the specifications may generally be considered as a definable feature of work, there are frequently more than one definable features under a particular section. This list will be agreed upon during the coordination meeting.

3.2.2 Additional Requirements for Design Quality Control (DQC) Plan

The following additional requirements apply to the Design Quality Control (DQC) plan:

(1) The Contractor's QCP Plan shall provide and maintain a Design Quality Control (DQC) Plan as an effective quality control program which will assure that all services required by this design-build contract are performed and provided in a manner that meets professional architectural and engineering quality standards. As a minimum, all documents shall be technically reviewed by competent, independent reviewers identified in the DQC Plan. The same element that produced the product shall not perform the independent technical review (ITR). The Contractor shall correct errors and deficiencies in the design documents prior to submitting them to the Government.

(2) The Contractor shall include the design schedule in the master project schedule, showing the sequence of events involved in carrying out the project design tasks within the specific contract period. This should be at a detailed level of scheduling sufficient to identify all major design tasks, including those that control the flow of work. The schedule shall include review and correction periods associated with each item. This should be a forward planning as well as a project monitoring tool. The schedule reflects calendar days and not dates for each activity. If the schedule is changed, the Contractor shall submit a revised schedule reflecting the change within 7 calendar days. The Contractor shall include in the DQC Plan the discipline-specific checklists to be used during the design and quality control of each submittal. These completed checklists shall be submitted at each design phase as part of the project documentation. Example checklists can be found in ER 1110-1-12.

(3) The DQC Plan shall be implemented by an Design Quality Control Manager who has the responsibility of being cognizant of and assuring that all documents on the project have been

coordinated. This individual shall be a person who has verifiable engineering or architectural design experience and is a registered professional engineer or architect. The Design Quality Control Manager shall be assigned as Design Quality Control Manager, but may have duties as Design Project Manager in addition to quality control. The Contractor shall notify the Contracting Officer, in writing, of the name of the individual, and the name of an alternate person assigned to the position.

The Contracting Officer will notify the Contractor in writing of the acceptance of the DQC Plan. After acceptance, any changes proposed by the Contractor are subject to the acceptance of the Contracting Officer.

3.2.3 Acceptance of Plan

Acceptance of the Contractor's plan is required prior to the start of design and construction. Acceptance is conditional and will be predicated on satisfactory performance during the design and construction. The Government reserves the right to require the Contractor to make changes in his CQC Plan and operations including removal of personnel, as necessary, to obtain the quality specified.

3.2.4 Notification of Changes

After acceptance of the CQC Plan, the Contractor shall notify the Contracting Officer in writing of any proposed change. Proposed changes are subject to acceptance by the Contracting Officer.

3.3 COORDINATION MEETING

After the Postaward Conference, before start of design or construction, and prior to acceptance by the Government of the CQC Plan, the Contractor shall meet with the Contracting Officer or Authorized Representative and discuss the Contractor's quality control system. The CQC Plan shall be submitted for review a minimum of 10 calendar days prior to the Coordination Meeting.

During the meeting, a mutual understanding of the system details shall be developed, including the forms for recording the CQC operations, design activities, control activities, testing, administration of the system for both onsite and offsite work, and the interrelationship of Contractor's Management and control with the Government's Quality Assurance. Minutes of the meeting shall be prepared by the Contractor and signed by both the Contractor and the Contracting Officer. The minutes shall become a part of the contract file. There may be occasions when subsequent conferences will be called by either party to reconfirm mutual understandings and/or address deficiencies in the CQC system or procedures which may require corrective action by the Contractor.

3.4 QUALITY CONTROL ORGANIZATION

3.4.1 Personnel Requirements

The requirements for the CQC organization are a CQC System Manager, a Design Quality Control Manager, and sufficient number of additional qualified personnel to ensure safety and contract compliance. The Safety and Health Manager shall receive direction and authority from the CQC System Manager and shall serve as a member of the CQC staff. Personnel

identified in the technical provisions as requiring specialized skills to assure the required work is being performed properly will also be included as part of the CQC organization. The Contractor's CQC staff shall maintain a presence at the site at all times during progress of the work and have complete authority and responsibility to take any action necessary to ensure contract compliance. The CQC staff shall be subject to acceptance by the Contracting Officer. The Contractor shall provide adequate office space, filing systems and other resources as necessary to maintain an effective and fully functional CQC organization. Complete records of all letters, material submittals, shop drawing submittals, schedules and all other project documentation shall be promptly furnished to the CQC organization by the Contractor. The CQC organization shall be responsible to maintain these documents and records at the site at all times, except as otherwise acceptable to the Contracting Officer.

3.4.2 CQC System Manager

The Contractor shall identify as CQC System Manager an individual within the onsite work organization who shall be responsible for overall management of CQC and have the authority to act in all CQC matters for the Contractor. The CQC System Manager shall be a construction person with a minimum of 5 years in related work. This CQC System Manager shall be on the site at all times during construction and shall be employed by the prime Contractor. The CQC System Manager shall be assigned as System Manager but may have duties as project superintendent in addition to quality control. An alternate for the CQC System Manager shall be identified in the plan to serve in the event of the System Manager's absence. The requirements for the alternate shall be the same as for the designated CQC System Manager.

3.4.3 CQC Personnel

A staff shall be maintained under the direction of the CQC system manager to perform all QC activities. The staff must be of sufficient size to ensure adequate QC coverage of all work phases, work shifts, and work crews involved in the construction. These personnel may perform other duties, but must be fully qualified by experience and technical training to perform their assigned QC responsibilities and must be allowed sufficient time to carry out these responsibilities. The QC plan will clearly state the duties and responsibilities of each staff member. A Design Quality Control Manager, who is a Registered Architect or Professional Engineer, shall be part of the Contractor's quality control staff. Other technical specifications may specify individuals for maintaining quality control for specific areas of work. These individuals shall be under the direction of the CQC System Manager.

3.4.4 Additional Requirement

In addition to the above experience and/or education requirements the CQC System Manager shall have completed the course entitled "Construction Quality Management For Contractors". This course is periodically offered at each of the four area offices in the Omaha District according to the following revolving training schedule:.

<u>Badger Area</u>	First Session	Between 15 & 25 April
	Second Session	Between 15 & 25 October
Point of Contact	Roy Brewer	(319) 753-1386

<u>Black Hills Area</u>	First Session	Between 1 & 10 March
	Second Session	Between 1 & 10 September
Point of Contact	Dwight Pochant	(605) 923-2983
<u>Fort Crook Area</u>	First Session	Between 15 & 25 January
	Second Session	Between 15 & 25 July
Point of Contact	Al Kreisler	(402) 293-2540
<u>Rocky Mountain</u>	First Session	Between 1 & 10 June
	Second Session	Between 1 & 10 December
Point of Contact	Paul Jendzejec	(719) 556-4184

The exact date and location for the sessions will be determined approximately 30 days in advance of the training. The cost of training is presently established at \$50 to be paid by each student in advance of the training. For information about a particular session, the best source is the point of contact listed above.

3.4.5 Organizational Changes

The Contractor shall maintain the CQC staff at full strength at all times. When it is necessary to make changes to the CQC staff, the Contractor shall revise the CQC Plan to reflect the changes and submit the changes to the Contracting Officer for acceptance.

3.5 SUBMITTALS AND DELIVERABLES

Submittals, if needed, shall be made as specified in Section 01330 SUBMITTAL PROCEDURES. The CQC organization shall be responsible for certifying that all submittals and deliverables are in compliance with the contract requirements. When Section 15950A HEATING, VENTILATING AND AIR CONDITIONING (HVAC) CONTROL SYSTEMS; 15951A DIRECT DIGITAL CONTROL FOR HVAC; 15990A TESTING, ADJUSTING, AND BALANCING OF HVAC SYSTEMS; or 15995A COMMISSIONING OF HVAC SYSTEMS are included in the contract, the submittals required by those sections shall be coordinated with Section 01330 SUBMITTAL PROCEDURES to ensure adequate time is allowed for each type of submittal required.

3.6 CONTROL

Contractor Quality Control is the means by which the Contractor ensures that the construction, to include that of subcontractors and suppliers, complies with the requirements of the contract. At least three phases of control shall be conducted by the CQC System Manager for each definable feature of the construction work as follows:

3.6.1 Preparatory Phase

This phase shall be performed prior to beginning work on each definable feature of work, after all required plans/documents/materials are approved/accepted, and after copies are at the work site. This phase shall include:

- a. A review of each paragraph of applicable specifications, reference codes, and standards. Prior to the preparatory meeting for each definable feature of work, the Contractor shall provide all technical references (i.e. building codes, life safety codes, etc.) referenced in the project specifications for feature(s) of

work being addressed at the preparatory meeting. These technical references shall be onsite and available for use by Contractor and Government personnel before the preparatory meeting is held and maintained until the feature(s) of work is/are accepted by the Government.

- b. A review of the contract drawings.
- c. A check to assure that all materials and/or equipment have been tested, submitted, and approved.
- d. Review of provisions that have been made to provide required control inspection and testing.
- e. Examination of the work area to assure that all required preliminary work has been completed and is in compliance with the contract.
- f. A physical examination of required materials, equipment, and sample work to assure that they are on hand, conform to approved shop drawings or submitted data, and are properly stored.
- g. A review of the appropriate activity hazard analysis to assure safety requirements are met.
- h. Discussion of procedures for controlling quality of the work including repetitive deficiencies. Document construction tolerances and workmanship standards for that feature of work.
- i. A check to ensure that the portion of the plan for the work to be performed has been accepted by the Contracting Officer.
- j. Discussion of the initial control phase.
- k. The Government shall be notified at least 48 hours in advance of beginning the preparatory control phase. This phase shall include a meeting conducted by the CQC System Manager and attended by the superintendent, other CQC personnel (as applicable), and the foreman responsible for the definable feature. The results of the preparatory phase actions shall be documented by separate minutes prepared by the CQC System Manager and attached to the daily CQC report. The Contractor shall instruct applicable workers as to the acceptable level of workmanship required in order to meet contract specifications.

3.6.2 Initial Phase

This phase shall be accomplished at the beginning of a definable feature of work. The following shall be accomplished:

- a. A check of work to ensure that it is in full compliance with contract requirements. Review minutes of the preparatory meeting.
- b. Verify adequacy of controls to ensure full contract compliance. Verify required control inspection and testing.
- c. Establish level of workmanship and verify that it meets minimum acceptable workmanship standards. Compare with required sample panels as appropriate.

- d. Resolve all differences.
- e. Check safety to include compliance with and upgrading of the safety plan and activity hazard analysis. Review the activity analysis with each worker.
- f. The Government shall be notified at least 48 hours in advance of beginning the initial phase. Separate minutes of this phase shall be prepared by the CQC System Manager and attached to the daily CQC report. Exact location of initial phase shall be indicated for future reference and comparison with follow-up phases.
- g. The initial phase should be repeated for each new crew to work onsite, or any time acceptable specified quality standards are not being met.

3.6.3 Follow-up Phase

Daily checks shall be performed to assure control activities, including control testing, are providing continued compliance with contract requirements, until completion of the particular feature of work. The checks shall be made a matter of record in the CQC documentation. Final follow-up checks shall be conducted and all deficiencies corrected prior to the start of additional features of work which may be affected by the deficient work. The Contractor shall not build upon nor conceal non-conforming work.

3.6.4 Additional Preparatory and Initial Phases

Additional preparatory and initial phases shall be conducted on the same definable features of work if: the quality of on-going work is unacceptable; if there are changes in the applicable CQC staff, onsite production supervision or work crew; if work on a definable feature is resumed after a substantial period of inactivity; or if other problems develop.

3.7 TESTS

3.7.1 Testing Procedure

The Contractor shall perform specified or required tests to verify that control measures are adequate to provide a product which conforms to contract requirements. Upon request, the Contractor shall furnish to the Government duplicate samples of test specimens for possible testing by the Government. Testing includes operation and/or acceptance tests when specified. The Contractor shall procure the services of a Corps of Engineers approved testing laboratory or establish an approved testing laboratory at the project site. The Contractor shall perform the following activities and record and provide the following data:

- a. Verify that testing procedures comply with contract requirements.
- b. Verify that facilities and testing equipment are available and comply with testing standards.
- c. Check test instrument calibration data against certified standards.
- d. Verify that recording forms and test identification control number

system, including all of the test documentation requirements, have been prepared.

- e. Results of all tests taken, both passing and failing tests, shall be recorded on the CQC report for the date taken. Specification paragraph reference, location where tests were taken, and the sequential control number identifying the test shall be given. If approved by the Contracting Officer, actual test reports may be submitted later with a reference to the test number and date taken. An information copy of tests performed by an offsite or commercial test facility shall be provided directly to the Contracting Officer. Failure to submit timely test reports as stated may result in nonpayment for related work performed and disapproval of the test facility for this contract.

3.7.2 Testing Laboratories

3.7.2.1 Capability Check

The Government reserves the right to check laboratory equipment in the proposed laboratory for compliance with the standards set forth in the contract specifications and to check the laboratory technician's testing procedures and techniques. Laboratories utilized for testing soils, concrete, asphalt, and steel shall meet criteria detailed in ASTM D 3740 and ASTM E 329.

3.7.2.2 Capability Recheck

If the selected laboratory fails the capability check, the Contractor will be assessed the actual cost for the recheck to reimburse the Government for each succeeding recheck of the laboratory or the checking of a subsequently selected laboratory. Such costs will be deducted from the contract amount due the Contractor.

3.7.3 Onsite Laboratory

The Government reserves the right to utilize the Contractor's control testing laboratory and equipment to make assurance tests, and to check the Contractor's testing procedures, techniques, and test results at no additional cost to the Government.

3.7.4 Furnishing or Transportation of Samples for Testing

Costs incidental to the transportation of samples or materials shall be borne by the Contractor. Samples of materials for test verification and acceptance testing by the Government shall be delivered to the Resident or Area (as directed) Office.

Coordination for each specific test, exact delivery location, and dates will be made through the Resident or Area (as directed) Office.

3.8 COMPLETION INSPECTION

3.8.1 Punch-Out Inspection

Near the end of the work, or any increment of the work established by a

time stated in the SPECIAL CONTRACT REQUIREMENTS Clause, "Commencement, Prosecution, and Completion of Work", or by the specifications, the CQC Manager shall conduct an inspection of the work. A punch list of items which do not conform to the approved drawings and specifications shall be prepared and included in the CQC documentation, as required by paragraph DOCUMENTATION. The list of deficiencies shall include the estimated date by which the deficiencies will be corrected. The CQC System Manager or staff shall make a second inspection to ascertain that all deficiencies have been corrected. Once this is accomplished, the Contractor shall notify the Government that the facility is ready for the Government Pre-Final inspection.

3.8.2 Pre-Final Inspection

The Government will perform the pre-final inspection to verify that the facility is complete and ready to be occupied. A Government Pre-Final Punch List may be developed as a result of this inspection. The Contractor's CQC System Manager shall ensure that all items on this list have been corrected before notifying the Government, so that a Final inspection with the customer can be scheduled. Any items noted on the Pre-Final inspection shall be corrected in a timely manner. These inspections and any deficiency corrections required by this paragraph shall be accomplished within the time slated for completion of the entire work or any particular increment of the work if the project is divided into increments by separate completion dates.

3.8.3 Final Acceptance Inspection

The Contractor's Quality Control Inspection personnel, plus the superintendent or other primary management person, and the Contracting Officer's Representative shall be in attendance at the final acceptance inspection. Additional Government personnel including, but not limited to, those from Base/Post Civil Facility Engineer user groups, and major commands may also be in attendance. The final acceptance inspection will be formally scheduled by the Contracting Officer based upon results of the Pre-Final inspection. Notice shall be given to the Contracting Officer at least 14 days prior to the final acceptance inspection and shall include the Contractor's assurance that all specific items previously identified to the Contractor as being unacceptable, along with all remaining work performed under the contract, will be complete and acceptable by the date scheduled for the final acceptance inspection. Failure of the Contractor to have all contract work acceptably complete for this inspection will be cause for the Contracting Officer to bill the Contractor for the Government's additional inspection cost in accordance with the contract clause titled "Inspection of Construction".

3.9 DOCUMENTATION

The Contractor shall maintain current records providing factual evidence that required quality control activities and/or tests have been performed. These records shall include the work of subcontractors and suppliers and shall be on an acceptable form that includes, as a minimum, the following information:

- a. Contractor/subcontractor and their area of responsibility.
- b. Operating plant/equipment with hours worked, idle, or down for repair.

- c. Work performed each day, giving location, description, and by whom. When Network Analysis (NAS) is used, identify each phase of work performed each day by NAS activity number.
- d. Test and/or control activities performed with results and references to specifications/drawings requirements. The control phase shall be identified (Preparatory, Initial, Follow-up). List of deficiencies noted, along with corrective action.
- e. Quantity of materials received at the site with statement as to acceptability, storage, and reference to specifications/drawings requirements.
- f. Submittals and deliverables reviewed, with contract reference, by whom, and action taken.
- g. Offsite surveillance activities, including actions taken.
- h. Job safety evaluations stating what was checked, results, and instructions or corrective actions.
- i. Instructions given/received and conflicts in plans and/or specifications.
- j. Contractor's verification statement.

These records shall indicate a description of trades working on the project; the number of personnel working; weather conditions encountered; and any delays encountered. These records shall cover both conforming and deficient features and shall include a statement that equipment and materials incorporated in the work and workmanship comply with the contract. The original and one copy of these records in report form shall be furnished to the Contracting Officer's Representative on the first day following the date(s) covered by the report, except that reports need not be submitted for days on which no work is performed. As a minimum, one report shall be prepared and submitted for every 7 days of no work and on the last day of a no work period. All calendar days shall be accounted for throughout the life of the contract. The first report following a day of no work shall be for that day only. Reports shall be signed and dated by the CQC System Manager. The report from the CQC System Manager shall include copies of test reports and copies of reports prepared by all subordinate quality control personnel.

3.10 SAMPLE FORMS

Sample forms enclosed at the end of this section.

3.11 NOTIFICATION OF NONCOMPLIANCE

The Contracting Officer will notify the Contractor of any detected noncompliance with the foregoing requirements. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, shall be deemed sufficient for the purpose of notification. If the Contractor fails or refuses to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to such stop orders shall be made the subject of claim for extension of time or for excess costs or damages.

by the Contractor.

(FIRM NAME)

DAILY QUALITY CONTROL REPORT

Daily Report No.: _____

DATE: _____

Contract No. _____

Project Title & Location:

Weather: _____ Precipitation: _____ in. _____ Temp: _____ Min. _____ Max. _____

1. Contract/Subcontractors and Area of Responsibility:

NUMBER:	TRADE	:	HOURS	:	EMPLOYER	:	LOCATION/DESCRIPTION WORK
1	PLUMBER	:	40	:	ABC COMPANY	:	123 MAIN ST, NEW YORK, NY
2	ELECTRICIAN	:	35	:	XYZ CORPORATION	:	456 PARK AVE, NEW YORK, NY
3	PAINTER	:	20	:	DEF LLC	:	789 BROADWAY, NEW YORK, NY
4	ROOFER	:	15	:	GHI PARTNERS	:	101 WALL ST, NEW YORK, NY
5	Welder	:	30	:	JKL INDUSTRIES	:	202 NASSAU ST, NEW YORK, NY

[illegible]

2. Operating Plant or Equipment. (Not hand tools)

[illegible]

3. Work Performed Today: (Indicate location and description of work performed by prime and/or subcontractors. When network analysis is used, identify work by NAS activity number).

4. Control Activities Performed:

Preparatory Inspections: (Identify feature of work and attach minutes).

Initial Inspections: (Identify feature of work and attach minutes).

Follow-Up Inspections: (List inspections performed, results of inspection compared to specification requirements, and corrective actions taken when deficiencies are noted).

5. Tests Performed and Test Results: (Identify test requirement by paragraph number in specifications and/or sheet number in plans).

6. Material Received: (Note inspection results and storage provided).

7. Submittals Reviewed:

(a) Submittal No.	(b) Spec/Plan Reference	(c) By Whom	(d) Action
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

8. Offsite Surveillance Activities, Including Action Taken:

9. Job Safety: (List items checked, results, instructions and corrective actions taken).

10. Remarks: (Instructions received or given. Conflict(s) in Plans and/or specifications. Delays encountered.).

Contractor's Verification: On behalf of the Contractor, I certify this report is complete and correct, and all materials and equipment used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as may be noted above.

CQC System Manager

Date

-- End of Section --

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SECTION 01501

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05/03

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SECTION 01501

ELLSWORTH AFB SECURITY REQUIREMENTS
05/03

PART 1 GENERAL

1.1 BASE ENTRY AUTHORITY LISTS

1.1.1 General

The Contractor shall be required to prepare and maintain an Entry Authority List (EAL) to allow his workers to have access to Ellsworth AFB and the work site. Base security forces will use this entry authority list to issue appropriate passes to contractor personnel requiring access to the base to perform contract work. Contractor personnel must stop at the Visitor Control Center on their first day of work at the base to receive a base pass and vehicle pass. Individuals must have a driver's license or other picture identification for the personal pass and vehicle registration and insurance verification for a vehicle pass. Contractor personnel shall have these base issued passes on their person at all times while they are on Ellsworth Air Force Base. Base security forces will check the work-site against the list from time to time to assure that those working on the project site are properly documented on the list. Requirements for preparation and maintenance and submittal of the EAL are as follows:

- a. The Contractor or his subcontractor shall organize the EAL.
- b. The Prime Contractor's list will be first, followed by each subcontractor's list in alphabetical order by company name. Each Contractor or subcontractor list shall be provided on the letterhead of the particular contractor or subcontractor. In the event that a subcontractor does not have letterhead, his list may be provided on the prime contractor's letterhead.
- c. The cover letter shall include the Contract Number and Title along with the notice to proceed date and the current contract completion date. It shall also include the normal work schedule for the contractor in terms of days and hours of work. The EALs shall asterisk the names of the on-site supervisory personnel with authority to vouch personnel onto the base for the contractor. These vouching personnel will be called upon to preannounce or vouch onto the base; those requiring access, but not on the current list.
- d. The list or lists shall not be company rosters; but shall contain only the names of personnel expected to need base access over the ensuing period for purposes of accomplishing the contract work.
- e. The EAL shall contain the Name, Social Security number, and Date of Birth for each person requiring access to the base to accomplish the contract work. Names shall be arranged in alphabetical order, last name first. The list shall identify primary & alternate work locations for each individual.

1.1.2 Copies of EAL

The original EAL and a copy shall be provided to the U.S. Army Corps of

Engineers Resident Office. The Resident Office will review and provide required copies to the Visitor Control Center for processing. Additionally, the Contractor shall maintain an up-to-date EAL at the construction site including all sub contractors.

1.1.3 Updating EAL

The EAL shall be updated and resubmitted in its entirety for each contractor and subcontractor when changes occur and personnel need access to Ellsworth AFB. The updated list shall reflect separately the employees who no longer work on the site as well as the addition of new employees requiring access to the work. The number of copies and distribution of the resubmittal shall be the same as for the original list.

1.1.4 Termination of Base Access Passes

The Contractor shall establish procedures to immediately reclaim and turn in to Corps of Engineers Resident Office the base passes of any person, who quits his employment, is terminated, or otherwise no longer requires access to the base. The Contractor shall collect all remaining passes and return them at the conclusion of the contract.

1.2 ENTRY TO AND INTERNAL CONTROLS ON ELLSWORTH AFB

a. Exit/Entry Search: Under the authority of the Internal Security Act of 1950, Section 21, Contractor and subcontractor employees and equipment are subject to random search upon entry to/or exit from the installation. This includes delivery of materials. Anticipate a delay of one-half hour for these random searches.

b. Base Entry Points: Enter or exit to Ellsworth Air Force Base may only be made through the following points during normal work hours or on official business.

(1) Ellsworth Commercial Gate/Bismarck Gate: This gate will be the primary point of entrance onto Ellsworth AFB for the contractor. Normal operational hours will be 0600 to 1800 hours daily. The Liberty Gate shall be used when this gate is closed.

(2) Ellsworth Main Gate/Liberty Gate: The Visitor Control Center is located next to this gate and will be the point for obtaining the necessary personnel and vehicle passes for entry onto Ellsworth AFB. This gate is open 24 hours per day.

1.3 PROHIBITED ITEMS

Except as provided for you in your contract, Contractor employees may not bring or possess any of the following items while on Ellsworth Air Force Base.

a. Drugs except those prescription drugs issued by a licensed pharmacist, based on a written prescription from a licensed medical doctor, for health care purposes.

b. Firearms, explosive material, etc.

c. Prohibited items identified above are subject to confiscation as evidence. Administrative or judicial action may be initiated against any individual possessing prohibited items.

1.4 TRAFFIC RULES AND REGULATIONS

The Contractor shall comply with the following traffic rules and regulations.

a. The state of South Dakota Motor Vehicle Code applies and is enforced on Ellsworth Air Force Base. The law requires that:

- (1) Proof of current motor vehicle liability insurance.
- (2) Proof of current vehicle registration must be available for issuance of vehicle pass.
- (3) Individuals have in their possession a valid driver's license and valid pictured I.D. to obtain pass.

b. Contractor employees are responsible for maintaining current registration requirements on any privately owned vehicle and contractor vehicles used in the performance of your contract. State vehicle registration, driver's license, vehicle insurance, etc. must be up-to-date at all times. Failure to do so may result in the cancellation of your base vehicle registration/pass.

c. Seat belts must be worn by all vehicle occupants.

d. Passengers will not ride in the rear of vehicles that are not equipped with proper seating and restraint devices; i.e., pickup trucks.

e. Moped/motorcycle operators are required to wear helmets with a visor or similar eye protection, pants extending to the ankles, hard soled boots or shoes, and have the headlights on while driving on the installation. Contractors are encouraged to attend the Ellsworth AFB motorcycle safety course if they are to operate a motorcycle on base.

f. On-Base Speed Limits:

- (1) 35 MPH unless otherwise posted.
- (2) 15 MPH in all housing areas.

1.5 PERSONNEL AND VEHICLE ENTRY REQUIREMENTS

a. Contractor employees should possess adequate identification such as a company I.D. card or a current driver's license. This identification should, at a minimum, include the physical description of the individual's height, color of hair, color of eyes, date of birth, etc., a picture of the individual and the individual's normal signature.

b. See paragraph BASE ENTRY AUTHORITY LIST above. The Contractor shall allow for a 72-hour period to conduct wants and warrants checks of perspective employees listed on the EAL and for subsequent employees added to the EAL.

c. Delivery vehicles; e.g., materials, parts, concrete, etc., must have a delivery slip, Bill of Lading, or work orders showing Ellsworth AFB (building number or address) as the destination.

d. The Contractor shall be responsible for ensuring that expired vehicle passes and identification cards of terminated employees are immediately returned to the Corps of Engineers Resident Office. All identification cards and vehicle passes shall be returned upon completion of the contract or termination of employment of an employee.

e. Contractor Vehicles: Vehicle registration is required for each vehicle to be operated on Ellsworth AFB. Each employee that will operate Contractor vehicles must have a current and valid driver's license to operate the vehicle on Ellsworth AFB. The contractor is ultimately responsible for ensuring individuals with suspended/revoked licenses or installation-driving privileges do not operate a motor vehicle on Ellsworth AFB.

f. Employee's Privately Owned Vehicles (POV's): Contractor employees may register and operate their POV's on Ellsworth AFB for the duration of the contract requiring their presence; however, when that contract expires, so do their driving privileges on this installation. Vehicle registration requires employees to provide current driver's license, motor vehicle registration, and vehicle insurance.

g. Prospective Employees: The contractor is responsible for the conduct of anyone he/she vouches onto the installation. The prospective employee will either be on a written entry authority listing where a pass could be issued or have a point of contact that is authorized to vouch him/her onto the installation.

1.6 EMERGENCY VEHICLES

Ambulances, Fire Department, Civil Engineering and Police vehicles have the right of way when their lights are flashing and sirens or horns are sounding. The Contractor bears primary responsibility for ensuring that each employee understands their responsibility to yield to emergency vehicles.

1.7 EFFECT OF FAILURE TO OBEY TRAFFIC RULES AND REGULATIONS

Failure to obey established state, local, and installation traffic rules/regulations may be grounds for the installation commander to suspend or revoke an individual's driving privileges on Ellsworth AFB. In addition, the state from which an individual driver's license was issued will be notified of all suspension and revocation actions.

1.8 BASE EXERCISES

Ellsworth AFB has peacetime as well as a wartime mission. To ensure Ellsworth AFB can perform its mission, frequent exercises are conducted. Note the following items:

a. No one is automatically exempt from exercises.

b. There is someone in charge of each exercise. Contractors are generally exempt from participation. In rare cases a contractor or their employees may inadvertently be detained in an exercise.

c. Should the Contractor or his employees get stopped at a cordon (exercise perimeter) or get told to evacuate an area, the Contractor may approach the guard and identify themselves, their purpose and destination or work location. The guard will pass the information

along for an exemption determination. Please be aware that this may take a while. Only company or properly marked vehicles may be allowed to cross cordons when approved-no Privately Owned Vehicles (POV's). In some cases it may be necessary for you to participate for your safety. Should any problems arise, please contact the Contracting Officer.

1.9 CONTRACTOR'S SECURITY REQUIREMENTS

a. Contractor equipment and facilities, located within the boundaries of Ellsworth AFB, will be provided the base's normal protection. The security of Contractor property, when it is contained within a restricted area is secondary to that provided for the priority resources located in the area. The government accepts no responsibility for lost or stolen material, equipment or tools, regardless of the item(s) location. The storage and security of these items lies solely with the Contractor.

b. The Contractor is expected to provide a reasonable degree of protection (security) for your property stored on the installation. Although Ellsworth AFB has stringent entry and internal controls, incidents of vandalism, breaking and entering, burglaries, etc still occur. Any crime victim or witness of a crime or incident should report it immediately to the on-duty Desk Sergeant, located in the Security Forces Control Center. This may be done in person or telephone by dialing 385-4001.

1.10 RANDOM CHECKS

Random checks of vehicles entering/exiting the base will be conducted. These checks are necessary to prevent the theft of USAF resources, property, and the transportation of narcotic and illegal drugs onto or off the installation. Failure to consent to these checks may be grounds for suspension or revoking a driver's base driving privileges.

1.11 RESTRICTED AREAS

Ellsworth AFB has several areas containing sensitive resources. These areas are posted with "RESTRICTED AREA" signs. In addition to signs, ropes and stanchions, red painted lines also define the area's boundaries. Contractor personnel may not enter these areas unless under escort by authorized personnel. It is the Contractor's responsibility for ensuring his employees are aware of the procedures for access to restricted areas and ensures that these procedures are observed.

1.12 ENTRY PROCEDURES FOR CONSTRUCTION PROJECTS INSIDE RESTRICTED AREAS

a. All contractors performing work inside established restricted areas on Ellsworth AFB must provide a separate authorization letter containing the following information:

(1) Contractor's letterhead, contract purpose, and inclusive dates of the contract. This letter must also include the full name and social security number of all personnel requiring entry into the restricted area.

(2) All vehicles required in the restricted area for the project must be listed on the letter with vehicle color, make, year, license plate number, and state of issue.

(3) These personnel must have two forms of identification in his/her possession at all times. At least one form must contain a photograph of the individual.

b. Additionally, each vehicle must have the company logo, either painted or placed on inside of windows (no magnetic signs are allowed on sides of vehicles) on each side of the vehicle.

c. All Contractors are escorted into the area by the USAF organization or unit directly associated with the project. While in the restricted area, you are to remain with the escort official at all times.

d. All vehicles entering the area are subject to search by security forces personnel. The escort official is responsible for processing the contractor through the entry control point, escorting personnel to and from the work area, and assisting in personnel and vehicle searches as required. The escort official is also responsible for providing personnel with an escort briefing.

e. In the event of an emergency that requires evacuation from the area, you will comply with the instructions of your escort official.

f. Workers and drivers planning to work within restricted areas are required to attend and pass a Flightline restrictions drivers training prior to working within the area.

1.13 CUSTOMS AND COURTESIES

The American Flag is honored Monday through Friday by the playing of "Retreat" and the "National Anthem" on the Base Public Address System. The Contractor may join the base in these ceremonies.

a. If driving, please pull to the right side of the roadway and stop until the ceremony is concluded.

b. If you are outdoors (not in a vehicle), please face the flagpole or the direction the music is coming from until the ceremony is concluded.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

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SECTION 01561

(SOUTH DAKOTA) NPDES PERMIT REQUIREMENTS
FOR STORM WATER DISCHARGES
FROM CONSTRUCTION SITES
05/03

PART 1 GENERAL

Attachment: "General Permit For Storm Water Discharges Associated With Construction Activities", Permit No. SDR10####

1.1 REFERENCES (Not Applicable)

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having an "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-05 Design Data

Notice of Intent.

Authorization Letter.

Storm Water Pollution Prevention Plan.

Notice of Termination.

SD-06 Test Reports

Reports.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 GENERAL

The Contractor shall be responsible for implementing the terms and requirements of the attached "General Permit For Storm Water Discharges Associated With Construction Activities", Permit No. SDR10####, for storm water discharges from construction sites. The Contractor shall be considered the "permittee". All submissions to the state shall be by certified mail. Copies of the return receipt for each submission shall be included with the submittal to the Contracting Officer's Representative (COR).

3.2 IMPLEMENTATION

3.2.1 Notice of Intent

The Contractor shall complete and submit a Notice of Intent (NOI) in accordance with Permit No. SDR10####. A copy of the submitted NOI shall be furnished to the COR at least 2 days prior to the commencement of construction activities. The Contractor shall be considered the "Applicant".

3.2.2 Authorization Letter

Construction activities regulated under Permit No. SDR10#### shall not begin until an authorization letter from the State granting coverage for the storm water discharges is received by the Contractor. A copy of the authorization letter shall be furnished to the COR at least 2 days prior to the commencement of construction activities.

3.2.3 Posting NOI and Authorization Letter

A copy of the NOI and the authorization letter shall be posted by the Contractor at the construction site in a prominent place for public viewing.

3.2.4 Storm Water Pollution Prevention Plan

The Contractor shall prepare and implement a Storm Water Pollution Prevention Plan (SWPPP) in accordance with Permit No. SDR10####. Any temporary or permanent erosion and sedimentation control measures shown on the drawings shall be incorporated into the Contractor's SWPPP. A copy of the SWPPP shall be submitted to the COR at least 2 days prior to the commencement of construction activities. Copies of all revisions to the SWPPP shall also be submitted.

3.2.5 Inspections and Reporting

The Contractor shall be responsible for all inspections and reporting required under the NPDES Permit No. SDR10####. Copies of all inspection reports shall be furnished to the COR.

3.2.6 Retention of Records

The Contractor shall retain a copy of the SWPPP, reports, and records of all data used to complete the NOI in accordance with Permit No. SDR10####.

3.2.7 Notice of Termination

The Contractor shall complete and submit a Notice of Termination (NOT) in accordance with Permit No. SDR10####. The Contractor shall be considered the "Facility Operator". A copy of the submitted NOT shall be furnished to the COR.

3.2.8 Renotification

If the current permit expires prior to completion of construction, the Contractor shall submit a new NOI in accordance with Permit No. SDR10####. A copy of all submissions to the State shall be furnished to the COR.

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Note – This page will be replaced with a copy containing the assigned permit number once coverage is authorized.

**SOUTH DAKOTA DEPARTMENT OF ENVIRONMENT AND NATURAL
RESOURCES**

**JOE FOSS BUILDING
523 EAST CAPITOL AVENUE
PIERRE, SOUTH DAKOTA 57501-3181**

**GENERAL PERMIT FOR STORM WATER DISCHARGES
ASSOCIATED WITH CONSTRUCTION ACTIVITIES**

**AUTHORIZATION TO DISCHARGE UNDER THE
SURFACE WATER DISCHARGE SYSTEM**

In compliance with the provisions of the South Dakota Water Pollution Control Act and the Administrative Rules of South Dakota (ARSD) Chapters 74:52:01 through 74:52:11, operators of storm water discharges from **construction** activities, located in the State of South Dakota are authorized to discharge in accordance with the conditions and requirements set forth herein.

This permit shall become effective on **July 1, 2002**.

This permit and the authorization to discharge shall expire at midnight, **June 30, 2007**.

Signed this **26th** day of **June, 2002**



Authorized Permitting Official

Steven M. Pirner
Secretary
Department of Environment and Natural Resources

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ATTACHMENT A NOTICE OF INTENT FORM

ATTACHMENT B NOTICE OF TERMINATION FORM

1.0 DEFINITIONS

1. **“Best Management Practices” (“BMPs”)** means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants to waters of the state. BMPs also include treatment requirements, operating procedures, and practices to control construction site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.
2. **“Control Measures”** as used in this permit, refers to any Best Management Practice or other method used to prevent or reduce the discharge of pollutants to waters of the state.
3. **“Final Stabilization”** means that either:
 - a. all soil disturbing activities at the site have been completed and a uniform perennial vegetative cover with a density of 70% of the native cover for unpaved areas and areas not covered by permanent structures has been established, or equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed; or
 - b. for individual lots in residential construction, that either: **1)** the permittee has completed final stabilization as specified in part (a) above, or **2)** the permittee has established temporary stabilization for an individual lot before the property owner assumes operational control of the property and the permittee informs the property owner of the need for, and benefits of, final stabilization; or
 - c. for construction projects on land used for agricultural purposes, final stabilization may be accomplished by returning the disturbed land to its pre-construction agricultural use. Areas disturbed that were not previously used for agricultural activities, such as buffer strips immediately adjacent to “waters of the state,” and areas which are not being returned to their pre-construction agricultural use must meet the final stabilization criteria in (a) or (b) above.
4. A **“Larger Common Plan of Development or Sale”** means a contiguous area where multiple separate and distinct construction activities are planned to occur at different times on different schedules under one plan.
5. **“Municipality”** means a city, town, county, district, sanitary district, or other public body created by or under state law with jurisdiction over the disposal of sewage, industrial wastes, or other wastes.
6. **“NOI”** means Notice of Intent to be covered by this permit (See Attachment A of this permit.)
7. **“NOT”** means Notice of Termination (See Attachment B of this permit).

8. **“Operator”** means the owner, party, person, general contractor, corporation, or other entity that has operational control over a construction project. The operator is responsible for ensuring compliance with all conditions of the permit and with development and implementation of the “storm water pollution prevention plan”.
9. **“Point Source”** means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff.
10. **“Pollutant”** is defined at ARSD § 74:52:01:35. A partial listing from this definition includes: dredged spoil, solid waste, sewage, garbage, sewage sludge, chemical wastes, biological materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial or municipal waste.
11. **“Regulated Substance”** means the compounds designated by the department under South Dakota Codified Law, §§ 23A-27-25, 34A-1-39, 34A-6-1.3(17), 34A-11-9, 34A-12-1 to 34A-12-15, inclusive, 38-20A-9, 45-6B-70, 45-6C-45, 45-6D-60, and 45-9-68, including pesticides and fertilizers regulated by the Department of Agriculture, the hazardous substances designated by the EPA pursuant to section 311 of the Federal Water Pollution Control Act Amendments of 1972, Pub.L. 92-500 as amended by the Clean Water Act of 1977, Pub.L. 95-217, the toxic pollutants designated by Congress or the EPA pursuant to section 307 of the Toxic Substances Control Act, Pub.L. 99-519, the hazardous substances designated by the EPA pursuant to section 101 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, Pub.L. 96-510, and petroleum, petroleum substances, oil, gasoline, kerosene, fuel oil, oil sludge, oil refuse, oil mixed with other wastes, crude oils, substances or additives to be utilized in the refining or blending of crude petroleum or petroleum stock, and any other oil or petroleum substance. This term does not include sewage and sewage sludge.
12. **“Runoff Coefficient”** means the fraction of total rainfall that will appear at the conveyance as runoff.
13. **“Secretary”** means the Secretary of the Department of Environment and Natural Resources or an authorized representative.
14. **“Storm Water”**, for the purpose of this permit, means storm water runoff, snow melt runoff, or surface runoff and drainage associated with construction activity.
15. **“Storm Water Associated with Construction Activity”** means the storm water runoff from construction activities including clearing, grading, and excavating, that result in the disturbance of five or more acres of total land area or which may be part of a larger common plan of development or sale if the larger common plan will ultimately disturb five or more acres of land.

16. **“Storm Water Associated with Small Construction Activity”** means the storm water runoff from construction activities including clearing, grading, and excavating, that result in the disturbance of land equal to or greater than one acre and less than five acres, or that are part of a larger common plan of development or sale; or as defined in 40 CFR § 122.26(b)(15) as promulgated on December 8, 1999.
17. **“Storm Water Associated with Industrial Activity”** means storm water runoff, snow melt runoff, or surface runoff and drainage from industrial activities as defined in 40 CFR § 122.26(b)(14).
18. **“SWD”** means Surface Water Discharge.
19. **“SWPPP”** means Storm Water Pollution Prevention Plan.
20. **“Waters of the State”** means all waters within the jurisdiction of this state, including all streams, lakes, ponds, impounding reservoirs, marshes, watercourses, waterways, wells, springs, irrigation systems, drainage systems, and all other bodies or accumulations of water, surface and underground, natural or artificial, public or private, situated wholly or partly within or bordering upon the state, but not waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the CWA other than cooling ponds as defined in 40 C.F.R. § 423.11(m) (July 1, 1991).

2.0 COVERAGE UNDER THIS PERMIT

2.1 Permit Area

This permit shall apply to storm water discharges located within the State of South Dakota.

2.2 Discharges Covered

1. This permit shall authorize all discharges of storm water associated with construction activity within the State of South Dakota that will result in the disturbance of five or more acres of total land area and those construction site discharges designated by the Secretary as needing a storm water permit. Discharges identified under Part 2.3 are excluded from coverage.
2. Effective January 1, 2003, this permit shall authorize all discharges of storm water associated with small construction activity within the State of South Dakota.
3. This permit shall only authorize storm water construction discharges that are mixed with a storm water discharge from an industrial source, where:
 - a. the industrial source is located on the same site as the construction activity; and
 - b. storm water discharges not associated with construction activities are covered by a separate SWD general permit or individual permit.

2.3 Discharges Not Covered. The following storm water discharges from construction sites are not authorized by this permit:

1. **Post Construction Discharges.** This permit does not authorize storm water discharges that originate from the site after construction activities have been completed and final stabilization at the site is achieved. Industrial and post-construction storm water discharges may need to be covered by a separate storm water permit.
2. **Discharges Mixed with Non-Storm Water.** This permit does not authorize discharges that are mixed with sources of non-storm water, other than discharges that are identified in Part 2.2 and Part 3.1 of this permit.
3. **Section 404 Permitted Discharges.** This permit does not authorize activities regulated by a Section 404 federal Clean Water Act permit.
4. **Discharges Threatening Water Quality.** This permit does not authorize storm water discharges from construction sites that the Secretary determines will cause, or have reasonable potential to cause or contribute to, violations of water quality standards.

5. **Discharges of Regulated Substances.** This permit does not authorize the discharge of regulated substances resulting from a spill.

2.4 Notice of Intent (NOI). The NOI form shall be signed in accordance with Part 6.7 of this permit and shall include the following information:

1. The name, address, and telephone number of the operator filing the NOI for permit coverage;
2. An indication of whether the operator is a Federal, State, Private, or other public entity;
3. The name (or other identifier), address, county, and legal location (i.e. section, township, range) of the construction project or site;
4. Confirmation that a storm water pollution prevention plan (SWPPP) has been developed or will be developed prior to commencing construction activities (Copies of the SWPPP or the permit should not be included with the NOI submission);
5. The name of the nearest receiving water(s);
6. Estimates of the project start and completion dates, and an estimate of the number of acres of the site on which soil will be disturbed; and,
7. A brief description of the project and construction site activities.

2.5 Obtaining Authorization.

1. A Notice of Intent (NOI) form, included in Attachment A, must be submitted to the address indicated on the NOI form to request coverage under this general permit for storm water discharges from construction sites. This information must be submitted at least 15 days prior to when the operator commences work at the site.
2. For small construction activities already in progress prior to January 1, 2003, the operator must submit a Notice of Intent by January 1, 2003. Small construction activities commencing after January 1, 2003 must submit a NOI at least 15 days prior to when the operator begins any work at the site.
3. Upon receipt of a complete NOI, the Secretary shall make the decision to grant or deny coverage, or request additional information. A letter of authorization shall be sent to the permittee granting coverage under this permit for the storm water discharges from construction activities.
4. A copy of the Department's authorization letter shall be posted at the construction site in a prominent place for public viewing (such as alongside a building permit) from the date

construction activities are initiated until final stabilization is achieved and coverage under this permit is terminated.

5. Where a new operator is selected after the submittal of a NOI, the previous operator must submit a Notice of Termination, and the new operator must submit a new NOI.
6. Operators are not prohibited from submitting late NOIs. When a late NOI is submitted, authorization is only for discharges that occur after permit coverage is granted. The Secretary reserves the right to take appropriate enforcement actions for any unpermitted activities that may have occurred between the time construction commenced and authorization of storm water discharges is granted.

2.6 Additional Notification Facilities which are operating under approved local sediment and erosion plans, grading plans, or storm water management plans shall also submit signed copies of the NOI to the local agency approving such plans at least 15 days prior to commencing work, or sooner where required by local rules.

2.7 Terminating Coverage.

1. Permittees wishing to terminate coverage under this permit must submit a Notice of Termination (NOT) that is signed in accordance with Part 6.7 of this permit. Compliance with this permit is required until a NOT is submitted.
2. All permittees shall submit a NOT within thirty (30) days after one or more of the following conditions have been met:
 - a. All storm water discharges authorized by this permit are eliminated and final stabilization has been achieved on all portions of the site for which the permittee is responsible;
 - b. Another operator/permittee has assumed control, in accordance with Part 2.5.5, over all areas of the site that have not been finally stabilized; or
 - c. All individual lots within a residential construction project have reached final stabilization, as defined in Part 1.3.b.

3.0 SPECIAL CONDITIONS

3.1 **Non-Storm Water Discharges.** The following non-storm water discharges may be authorized by this permit provided the non-storm water component of the discharge is identified in the storm water pollution prevention plan with an explanation of pollution prevention measures to be implemented: discharges from fire fighting activities; uncontaminated ground water; and, waters used, as a best management practice, to wash vehicles or control dust.

3.2 **Unauthorized Release of Regulated Substances.** This permit does not authorize the discharge of any regulated substance listed in ARSD § 74:34:01:03, including but not limited to fertilizers, pesticides, and petroleum substances such as oil and gasoline. If a release occurs, the permittee is required to notify the Department of Environment and Natural Resources Ground Water Quality Program at (605) 773-3296 or Emergency Management at (605) 773-3231 within 24 hours of having knowledge of the discharge.

A written report of the unauthorized release of any regulated substance, including quantity discharged and the location of the discharge, must be sent to DENR within 14 days of the discharge.

The storm water pollution prevention plan must identify and address the following measures: ways to prevent the reoccurrence of such releases; the proper response to such releases if and when they do occur; and steps to prevent pollutants from contaminating storm water runoff. The plan shall be modified and changes implemented, as appropriate.

4.0 STORM WATER POLLUTION PREVENTION PLAN

4.1 Deadlines for Plan Preparation and Compliance. The storm water pollution prevention plan, also referred to as “the plan”, must be developed prior to the start of construction and implemented for all construction activity.

4.2 Contents of Plan. The plan shall include, at a minimum, the following items:

1. Site Description. Each plan shall provide a description of potential pollutant sources and other information as indicated below:

- a.** A description of the overall project and the type of construction activity;
- b.** Estimates of the total area of the site and the total area that is expected to be disturbed by excavation, grading, grubbing, or other activities during the life of the project;
- c.** A description of the intended sequence of activities that disturb soils for major portions of the site;
- d.** A description of the soil within the disturbed area(s);
- e.** The name of the surface water(s) at or near the disturbed area that may receive discharges from the project site; and
- f.** A site map indicating:
 - (1)** drainage patterns and approximate slopes anticipated after major grading activities;
 - (2)** areas of soil disturbance;
 - (3)** location of major structural and nonstructural controls identified in the plan;
 - (4)** location of areas where stabilization practices are expected to occur;
 - (5)** surface waters, including an aerial extent of wetland acreage; and
 - (6)** locations where storm water is discharged to surface water.

2. Controls. The plan shall describe for each major activity identified in the site description: **a)** appropriate control measures; **b)** when they will be implemented during the construction process; and **c)** who is responsible for implementation. The description and implementation of controls shall address the following minimum components:

a. Erosion and Sediment Controls.

(1) Goals and Criteria.

- (a)** Erosion and sediment controls must retain sediment on site to the best extent practicable.

- (b) All control measures must be properly selected, installed, and maintained in accordance with the manufacturer's specifications and good engineering practices. If periodic inspections or other information indicates a control has been used inappropriately, or incorrectly, the permittee must replace or modify the control for site situations.
 - (c) If sediment escapes the construction site, off-site accumulations of sediment must be removed at a frequency sufficient to minimize offsite impacts. The plan must be modified to prevent further sedimentation off-site.
 - (d) The design capacity of sediment traps and sedimentation ponds must be included in the plan. At a minimum, sediment must be removed from sediment traps or sedimentation ponds when design capacity has been reduced by 50% or more.
 - (e) Litter, construction debris, and construction chemicals shall be properly handled to prevent contributing pollutants to storm water discharges.
 - (f) Offsite material storage areas used solely by the permitted project are considered a part of the project and shall be addressed in the pollution prevention plan.
- (2) **Stabilization Practices.** The plan shall include a description and schedule of interim and permanent stabilization practices; a record of the dates when major grading activities occur, when construction activities temporarily or permanently cease on a portion of the site, and when stabilization measures are initiated. Site plans should ensure that existing vegetation is preserved where possible and that disturbed portions of the site are stabilized. Stabilization measures shall be initiated as soon as possible, but in no case later than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased. Initiation of final or temporary stabilization may exceed the 14-day limit if earth-disturbing activities will be resumed within 21 days. All other exceptions must be approved on an individual basis by the Secretary.
- (3) **Structural Practices.** The plan shall include a description of structural practices to divert flows from exposed soils, store flows, or otherwise limit runoff and the discharge of pollutants from exposed areas of the site to the degree possible. Placement of structural practices in floodplains and wetlands should be avoided to the degree possible. The installation of these devices may be subject to Section 404 of the federal Clean Water Act.
- (a) For common drainage locations, a temporary (or permanent) sediment basin providing at least 3,600 cubic feet of storage per acre drained, or equivalent control measures, shall be provided where attainable until final stabilization of the site. This requirement does not apply to flows that are either undisturbed or have undergone final stabilization, or where such flows are diverted around

both the disturbed area and the sediment basin. If the required temporary sediment basin or equivalent controls are not attainable, smaller sediment basins and/or sediment traps shall be used.

- (b) At a minimum, effective sediment controls are required for all sideslope and downslope boundaries of the construction area.
- (c) Use of a combination of sediment and erosion control measure is encouraged to achieve maximum pollutant removal.

b. **Storm Water Management.** The plan shall include a description of practices that will be installed during the construction process to control pollutants in storm water discharges occurring after construction operations have been completed. Such practices may include:

- (1) Storm water ponds; flow reduction by use of open vegetated swales and natural depressions; infiltration of runoff onsite; and sequential systems which combine several practices. The plan shall include an explanation of the technical basis used to select the practices to control pollution where flows exceed predevelopment levels.
- (2) Velocity dissipation devices shall be placed at discharge locations and along the length of any outfall channel to minimize erosion and protect the receiving water.

Under this permit, permittees are responsible for the installation and maintenance of storm water management measures prior to final stabilization of the site, and are not responsible for maintenance after storm water discharges associated with construction activity have been eliminated from the site and a NOT has been submitted. However, post-construction storm water BMPs that discharge pollutants from point sources once construction is completed, may in themselves, need authorization under a separate permit.

c. **Other Controls.**

- (1) The plan shall include a description of procedures to maintain vegetation, erosion and sediment control measures, and other protective measures identified in the site plan. This includes minimizing tracking of sediments off-site and generation of dust.
- (2) The plan shall include a description of construction and waste materials expected to be stored on-site, with updates as appropriate. The plan shall also include a description of controls to reduce pollutants from these materials including storage practices to minimize exposure of the materials to storm water, and spill prevention and response.

- d. **Approved Local Plans.** Permittees must include applicable local sediment and erosion requirements in their plan. The plan must be modified when the permittee is notified that the local requirements have changed.
3. **Maintenance.** All erosion and sediment control measures and other protective measures identified in the plan must be maintained in effective operating condition. If site inspections, required by Part 4.2.4 below, identify BMPs that are not operating effectively, maintenance shall be performed before the next anticipated storm event, or as necessary to maintain the continued effectiveness of storm water controls. If maintenance prior to the next anticipated storm event is impracticable, maintenance must be scheduled and accomplished as soon as practicable.
4. **Inspections.** The permittee shall ensure that personnel who are familiar with permit conditions and the proper installation and operation of pollution prevention measures conduct an inspection of the site at least once every seven (7) calendar days and within 24 hours of the end of a storm that is 0.5 inches or greater or a snowmelt event that causes surface erosion. Where runoff is unlikely due to winter conditions, such inspections shall be conducted at least once per month. The inspection shall include disturbed areas of the construction site that have not been finally stabilized, areas used for storage of materials, structural control measures, and locations where vehicles enter or exit the site. These areas shall be inspected for evidence of, or the potential for, pollutants entering the drainage system, and erosion and sediment control measures identified in the plan shall be observed to ensure that they are operating correctly and sediment is not tracked offsite.

A report shall be made summarizing the areas inspected, the name(s) and title(s) of personnel making the inspection, the date(s) of the inspection, major observations, and corrective actions taken. These reports shall be retained as part of the plan for at least three (3) years after the site has reached final stabilization and coverage under the permit has been terminated. Such reports shall identify any incidents of non-compliance.

Based on the results of the inspection, the plan shall be revised and implemented, in no case later than seven (7) calendar days following the inspection. Where an inspection does not identify any incidents of non-compliance, the report shall contain a certification that the site is in compliance with the plan and this permit. The report shall be signed in accordance with the signatory requirements of this permit.

4.3 Signature and Plan Review

1. The plan shall be signed in accordance with the signatory requirements, Part 6.7, and retained on-site for the duration of activity at the permitted location.
2. The permittee shall make plans available upon request to the Secretary, EPA, or, in the case of storm water that discharges through a municipal separate storm sewer system, to the operator of the municipal system.

3. The Secretary may notify the permittee at any time that the plan does not meet the minimum requirements of this part. This notification will identify the provisions of the permit that are not being met by the plan and identify which provisions require modifications in order to meet the minimum requirements. Within seven (7) days of notification, the permittee shall make the required changes to the plan and shall submit to the Secretary a written certification that the requested changes have been made. The Secretary may take appropriate enforcement action for the period of time the permittee was operating under a plan that did not meet the minimum requirements of this permit.
- 4.4 **Keeping Plans Current.** The permittee shall amend the plan whenever there is a change in design, construction, operation, or maintenance, which has a significant effect on the potential for the discharge of pollutants to the waters of the state. The plan shall also be amended if the plan proves to be ineffective in eliminating or significantly minimizing pollutants present in the storm water.

5.0 RETENTION OF RECORDS

1. The permittee shall retain on-site, or make readily available, a copy of the plan and DENR's letter granting coverage under this permit from the date of project initiation to the date of final stabilization.
2. The permittee shall retain copies of storm water pollution plans and all reports required by this permit, and records of all data used to complete the NOI and NOT, for a period of at least three (3) years from the date that the site is finally stabilized. This period may be extended by request of the Secretary at any time.
3. All reports and documents required by this permit shall, upon request of the Secretary, be submitted to the South Dakota Department of Environment and Natural Resources at the address below:

South Dakota Department of Environment and Natural Resources
Surface Water Quality Program
523 East Capitol Ave.
Pierre, SD 57501-3181

6.0 STANDARD PERMIT CONDITIONS

6.1 Duty to Comply.

1. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the South Dakota Water Pollution Control Act and the federal Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal. The permittee shall give the Secretary advance notice of any planned changes at the permitted facility or of an activity that may result in permit noncompliance.
2. Any person who violates a permit condition or makes any false statement, representation, or certification, may be subject to enforcement action under SDCL, Chapter 34A-2.
3. The permittee is responsible for complying with all local ordinances and requirements. Local governments may have additional or more stringent requirements than those included in this permit.

6.2 **Continuation of the Expired General Permit.** An expired general permit continues in force and effect until a new general permit is issued. Any permittee with coverage under the general permit at the time of expiration will continue to have coverage until a new general permit is issued. Upon the effective date of the new permit, the existing permit will be terminated. To obtain coverage under the new permit, a *Notice of Intent for Reauthorization* and *Certification of Applicant* must be submitted within 30 days after the issuance of the new permit.

6.3 **Need to Halt or Reduce Activity Not a defense.** It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

6.4 **Duty to Mitigate.** The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

6.5 **Duty to Provide Information.** The permittee shall furnish to the Secretary, within a reasonable time, any information which the Secretary may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Secretary, upon request, copies of records required to be kept by this permit.

6.6 **Other Information.** When the permittee becomes aware that he or she failed to submit any relevant facts or submitted incorrect information in the NOI or in any other report to the Secretary, he or she shall promptly submit such facts or information.

6.7 Signatory Requirements. All Notices of Intent and Termination, plans, reports, certifications or information submitted to the Secretary, shall be signed and certified by the following signatory official:

1. All NOIs and NOTs shall be signed as follows:
 - a. For a corporation: by a responsible corporate officer;
 - b. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or
 - c. For a municipality, State, Federal, or other public agency: by either a principal executive officer or ranking elected official.
2. All reports required by the permit and other information requested by the Secretary shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:
 - a. The authorization is made in writing by a person described above and submitted to the Secretary. The authorization shall specify either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of manager, operator, superintendent, or position of equivalent responsibility or an individual or position having overall responsibility for environmental matters for the company.
 - b. If an authorization under this section is no longer accurate because a different operator has responsibility for the overall operation of the construction site, a new letter of authorization satisfying the requirements of this section must be submitted to the Secretary prior to, or together with, any reports, information, or applications to be signed by an authorized representative.
3. The following certification statement must be included with any documents signed under this section:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

6.8 Oil and Hazardous Substance Liability. Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under Section 311 of the Federal Clean Water Act.

- 6.9 Property Rights.** The Secretary's issuance of this permit does not convey any property rights of any sort, any exclusive privileges, any authorization to damage, injure or use any private property, any authority to invade personal rights, any authority to violate federal, state or local laws or regulations, or any taking, condemnation or use of eminent domain against any property owned by third parties. The State does not warrant that the permittee's compliance with this permit and operation under this permit will not cause damage, injury or use of private property, an invasion of personal rights, or violation of federal, state or local laws or regulations. The permittee is solely and severally liable for all damage, injury or use of private property, invasion of personal rights, infringement of federal, state or local laws and regulations, or taking or condemnation of property owned by third parties, which may result from actions taken under the permit.
- 6.10 Severability.** Any portion of this permit that is found to be void, or is challenged, shall not affect the validity of the various permit requirements that are not void or challenged.
- 6.11 Requiring an Individual Permit or an Alternative General Permit.** The Secretary may either deny coverage or require any person requesting coverage under the general permit to apply for, and obtain, an individual Surface Water Discharge permit. Cases where an individual permit may be required include the following:
1. The permittee is not in compliance with the conditions of the general permit;
 2. A change has occurred in the availability of demonstrated technologies or practices for the control or abatement of pollutants applicable to construction sites;
 3. Effluent limitation guidelines are promulgated for point sources covered by this general permit;
 4. A water quality management plan containing requirements applicable to construction sites is approved; and
 5. The discharge is a significant contributor of pollution to waters of the state or it presents a health hazard.
- 6.12 Proper Operation and Maintenance.** The permittee shall at all times properly operate and maintain all systems of treatment and control which are used to achieve compliance with the conditions of this permit. Proper operation and maintenance requires the operation of backup or auxiliary facilities or similar systems, installed by a permittee only when necessary to achieve compliance with the conditions of the permit.
- 6.13 Inspection and Entry.** The permittee shall allow the Secretary, the EPA Regional Administrator, or the operator of a municipal separate storm sewer system receiving discharges from the site, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and,
4. Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by the South Dakota Water Pollution Control Act, any substances or parameters at any location.

6.14 Permit Actions. This permit may be modified, revoked and reissued, or terminated by the Secretary for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

ATTACHMENT A



DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

NOTICE OF INTENT (NOI)

to Obtain Coverage Under the SWD General Permit for
Storm Water Discharges Associated with Industrial or Construction Activities

Return to:

SD Department of Environment and Natural Resources
Surface Water Quality Program
523 East Capitol Avenue
Pierre, South Dakota 57501-3181
Telephone: (605) 773-3351 or 1-800-SDSTORM

PLEASE PRINT OR TYPE

I. Applicant/Owner Information:

Name _____ Phone _____

Responsible Contact Person _____

Address _____

City _____ State _____ Zip Code _____

Type of Ownership:

☐ Private

☐ Federal

☐ State

☐ Public (Other than Federal or State)

II. Facility/Site Information:

Name _____ Phone _____

Responsible Contact Person _____

Address _____

City _____ State _____ Zip Code _____

III. Type of Permit Requested: Check (X) the appropriate response:

☐ Industrial Activity

☐ Construction Activity

IV. Pollution Prevention Plan

A. Has the Pollution Prevention Plan been developed as Required? Yes ☐ No ☐

If No, when will it be developed? _____
Please note: The plan must be developed before any industrial or construction activity begins

B. Please include a brief description of best management practices being used at the facility/site:

V. Facility/Site Location:

A. Quarter _____ Section _____ Township _____ Range _____
County _____ [If available: Latitude _____ Longitude _____]

B. Site/Project Name: _____

C. What is the total area covered by the facility/construction site (in acres) _____

FOR DENR USE ONLY

Postmark Date: _____ Permit Number: _____ Date Permitted: _____

VI. Receiving Waters:

Please list all possible receiving waters of the storm water discharge (if discharging to a Municipal Storm Sewer, indicate which municipality and the ultimate receiving water): _____

VII. Nature of Discharge

- A. **Standard Industrial Classification (SIC) codes of this facility** (Include at least one, and up to four, SIC or 6-digit North American Industry Classification (NAIC) codes which best describe the facility. For construction activities, no codes are assigned; therefore, indicate **CO**): _____

- B. Please include a brief description of the activities conducted at this facility or construction site: _____

VIII. Operational History (Industrial Only)

Date Constructed: _____

Operational Start-up: _____

Construction Project History (Construction Only)

Project Start Date (MM/DD/YY): _____

Estimated Area of Total Disturbance (in acres): _____

Estimated Completion Date (MM/DD/YY): _____

IX. Existing Environmental Permits

Please check (X) all other Environmental Permits which are held by this facility/activity. Include permit numbers in the space provided:

- ☐ SWD or NPDES (Discharges to Surface Water) _____
- ☐ UIC (Underground Injection of Fluids) _____
- ☐ RCRA (Hazardous Wastes) _____
- ☐ PSD (Air Emissions from Proposed Sources) _____
- ☐ Other (please specify) _____

X. Certification (Authorized representative should *initial* the box)

☐

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including revocation of the permit and the possibility of fine and imprisonment for knowing violations. In addition, I certify that I am aware of the terms and conditions of the General Storm Water permit and I agree to comply with those requirements.

CERTIFICATION OF APPLICANT (COA)

I, _____, the applicant in the above matter after being duly sworn upon oath hereby certify the following information in regard to this application:

South Dakota Codified Laws Section 1-40-27 provides:

"The secretary may reject an application for any permit filed pursuant to Titles 34A or 45, including any application by any concentrated swine feeding operation for authorization to operate under a general permit, upon making a specific finding that:

(1) The applicant is unsuited or unqualified to perform the obligations of a permit holder based upon a finding that the applicant, any officer, director, partner or resident general manager of the facility for which application has been made:

- (a) Has intentionally misrepresented a material fact in applying for a permit;*
- (b) Has been convicted of a felony or other crime involving moral turpitude;*
- (c) Has habitually and intentionally violated environmental laws of any state or the United States which have caused significant and material environmental damage;*
- (d) Has had any permit revoked under the environmental laws of any state or the United States; or*
- (e) Has otherwise demonstrated through clear and convincing evidence of previous actions that the applicant lacks the necessary good character and competency to reliably carry out the obligations imposed by law upon the permit holder; or*

(2) The application substantially duplicates an application by the same applicant denied within the past five years which denial has not been reversed by a court of competent jurisdiction. Nothing in this subdivision may be construed to prohibit an applicant from submitting a new application for a permit previously denied, if the new application represents a good faith attempt by the applicant to correct the deficiencies that served as the basis for the denial in the original application.

All applications filed pursuant to Titles 34A and 45 shall include a certification, sworn to under oath and signed by the applicant, that he is not disqualified by reason of this section from obtaining a permit. In the absence of evidence to the contrary, that certification shall constitute a prima facie showing of the suitability and qualification of the applicant. If at any point in the application review, recommendation or hearing process, the secretary finds the applicant has intentionally made any material misrepresentation of fact in regard to this certification, consideration of the application may be suspended and the application may be rejected as provided for under this section.

Applications rejected pursuant to this section constitute final agency action upon that application and may be appealed to circuit court as provided for under chapter 1-26."

Pursuant to SDCL 1-40-27, I certify that I have read the forgoing provision of state law, and that I am not disqualified by reason of that provision from obtaining the permit for which application has been made.

Dated this _____, day of _____, 20____.

NOTE: The Notice of Intent must be signed by the authorized chief elective, an executive officer or a corporate responsible official of the applicant, or by the applicant, if an individual.

Name (print) _____

Title _____

Signature _____

Subscribed and sworn before me this _____ day of _____, 20____.

Notary Public

My commission expires: _____

(SEAL)

**PLEASE ATTACH SHEET DISCLOSING ALL FACTS PERTAINING TO
SDCL 1-40-27 (1) (a) THROUGH (e).
ALL VIOLATIONS MUST BE DISCLOSED, BUT WILL NOT
AUTOMATICALLY RESULT IN THE REJECTION OF AN APPLICATION.**

ATTACHMENT B



DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

NOTICE OF TERMINATION (NOT) of Coverage Under the SWD General Permit for Storm Water Discharges Associated with Industrial or Construction Activities

This form is required to be submitted when a discharge permit is no longer required or necessary. Submission of this form shall in no way relieve the permittee of permit obligations required prior to submission of this form. Please submit this form to the following address:

original to: SD Department of Environment and Natural Resources
Surface Water Quality Program
523 East Capitol Avenue
Pierre, South Dakota 57501-3181
Telephone: (605) 773-3351 or 1-800-SDSTORM

PLEASE PRINT OR TYPE

I. Facility Operator Information

Name _____ Phone _____
Street _____
City _____ State _____ Zip Code _____

II. Mailing Address of Facility/Site Location

Name _____ Phone _____
Responsible Contact Person _____
Street _____
City _____ State _____ County _____ Zip Code _____

III. Permit Number: _____

IV. Check the reason for termination of permit coverage:

- ☐ Storm Water Discharge is no longer occurring. If construction, has the area been restabilized? Please explain: _____

☐ You are no longer the operator of the facility. Please explain: _____

I certify under penalty of law that all storm water discharges associated with industrial or construction activity from the identified facility that are authorized by a SWD general permit have been eliminated or that I am no longer the operator of the facility or construction site. I understand that by submitting the Notice of Termination, I am no longer authorized to discharge storm water associated with industrial or construction activity under this general permit, and that discharging pollutants in storm water associated with industrial or construction activity to waters of the state is unlawful under the federal Clean Water Act, where the discharge is not authorized by a SWD permit. I also understand that the submittal of this Notice of Termination does not release an operator from liability for any violations of this permit or the South Dakota Water Pollution Control Act. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

NOTE: NOT must be signed by the authorized chief elective or executive officer of the applicant, or by the applicant, if an individual.

Name (print) _____ Title _____
Signature _____ Date _____

FOR DENR USE ONLY

Permit Number: _____ Postmark Date: _____ Date Terminated: _____

STATEMENT OF BASIS

Permit Type: General Surface Water Discharge Permit for **Construction Activities** in South Dakota

The statements in this document are intended solely as guidance to aid in complying with the Storm Water Regulations. The guidance is not a substitute for reading the “General Permit for Storm Water Discharges Associated with Construction Activities” and understanding all its requirements as they apply to your project or site.

BACKGROUND

In 1987, Congress amended the Clean Water Act to require implementation, in two phases, of a comprehensive national program for addressing storm water discharges. The first phase of the program, commonly referred to as “Phase I,” was promulgated on November 16, 1990. Under Phase I, the Environmental Protection Agency (EPA) established the permitting requirements for discharges of “storm water associated with construction activity,” which EPA included in its definition of “storm water discharges associated with industrial activity.” This definition included point source discharges from construction activities that disturb five or more acres of land. On December 8, 1999, EPA promulgated Phase II of the Storm Water Regulations, which expanded the definition to include point source discharges from small construction activities that disturb between one and five acres of land.

INTRODUCTION

Construction activities have the potential to produce many pollutants that may contaminate storm water runoff. Pollutants such as sediment, pesticides, toxic chemicals, metals, and oil can contaminate storm water and enter waters of the state. Clearing land of grass, trees, shrubs, rocks, and other ground cover can change natural water runoff patterns and increase erosion. Some construction activities require the use of toxic or hazardous materials, which contain metals and other materials that may be harmful to humans, fish, wildlife, and plants. When these materials are not properly handled or stored, the resulting leaks and spills can pollute storm water and can impact drinking water sources and waters protected for recreation, aquatic life, and other beneficial uses.

The intent of the storm water regulations is to improve and protect water quality by reducing or eliminating contaminants in storm water. Storm water runoff consists of rainwater and melted snow that runs off the land and directly, or indirectly by way of storm sewers, enters waters of the state, such as lakes, rivers, streams, wetlands, and ponds. The term “construction activity” includes point source discharges from areas undergoing operations such as clearing, grading, and excavation. Construction activities can include road building, construction of residential houses, office buildings, industrial sites, or demolition. It does not include agricultural activities or maintenance activities.

PERMIT DESCRIPTION

The South Dakota Department of Environment and Natural Resources (DENR) is renewing the general permit for storm water discharges associated with construction activities. This general permit contains requirements that are based on technology considerations, Best Management Practices, and other conditions applicable to the types of storm water generated by construction activities. The proposed permit will replace the current permit, which was issued on November 14, 1995.

Due to the nature of the scheduling of these construction activities, obtaining an individual Surface Water Discharge (SWD) permit may significantly impact the timing of a project because of administrative requirements. Therefore a general permit is being issued for these operations. The general permit regulations of the Administrative Rules of South Dakota (ARSD) § 74:03:18:48, provide for the issuance of general permits where covered facilities:

1. Are within prescribed geographic boundaries;
2. Involve substantially the same types of operations;
3. Discharge the same types of wastes;
4. Require the same effluent limits or operating conditions;
5. Require similar monitoring; and
6. Are more appropriately controlled under a general permit than individual permits.

South Dakota is proposing to issue a general permit under the Surface Water Discharge System for storm water discharges associated with construction activities and small construction activities. The intent of a general permit for storm water associated with these activities is to:

1. Facilitate the scheduling of these activities by reducing the administrative delays in their authorization;
2. Establish uniform criteria for management practices and effluent limits, for discharges from these activities; and
3. Promote consistent permitting with respect to these activities.

COVERAGE UNDER THE GENERAL PERMIT

To obtain coverage under the proposed general permit for discharges associated with construction activities, a Notice of Intent (NOI) form must be submitted to DENR at least 15 days prior to the start of construction. The Secretary then makes the decision to grant or deny coverage, or request additional information. A copy of the NOI form is included in Attachment A of the permit.

For existing construction operations already covered under the current storm water general permit for construction activities, a Notice of Intent (NOI) for Reauthorization and Certification of Applicant (COA) needs to be submitted to continue coverage under this new permit. Coverage under the existing general storm water permit will expire within 30 days of the effective date of the new permit. This will provide a reasonable opportunity to submit a complete Notice of Intent

for Reauthorization under the new general permit, or to properly request termination of coverage under the current permit.

EXEMPTIONS

The Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 added an exemption to the storm water regulations for municipalities serving a population less than 100,000 people. Storm water discharges associated with industrial activities (including construction, but excluding airports, steam electric power plants, or uncontrolled sanitary landfills) that are owned or operated by a small municipality were not required to obtain coverage under a storm water permit. However, these facilities are not permanently exempted from the regulation. This exemption expires on March 10, 2003. All required storm water permits must be in place on or before this date.

STORM WATER POLLUTION PREVENTION PLAN

The permittee is required to develop and implement a Storm Water Pollution Prevention Plan prior to the start of construction. This plan details the Best Management Practices (BMPs) the permittee will implement to reduce or eliminate a discharge of pollutants. Permit requirements for the storm water pollution prevention plan were designed for maximum flexibility to allow the development of the needed storm water controls based on the specifics of the site. Some of the factors to consider when developing the plan include: local development requirements and/or building codes; precipitation patterns for the area at the time the project will be underway; soil types; slopes; sensitivity of nearby water bodies; safety concerns of the storm water controls (i.e., potential safety hazards of water in storm water retention ponds to humans and wildlife; the potential of drawing birds to retention ponds and the hazards they pose to aircraft); and coordination with other site operators.

The permit requires that the storm water “controls” be described and implemented as part of the storm water pollution prevention plan. The following information, taken from the “Fact Sheet for the EPA [Region 8] Construction General Permit,” describes some examples of pollution prevention measures or best management practices. A more thorough description of these practices is given in “Storm Water Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices,” U.S. EPA, 1992. An electronic version of this document is available from EPA’s web site (www.epa.gov/npdes/stormwater), or a hardcopy of the summary document may be obtained from DENR or EPA upon request. A table listing common BMPs and their uses is also included in Attachment A of this Statement of Basis.

Erosion and Sediment Controls

Erosion controls provide the first line of defense in preventing off-site sedimentation and are designed to prevent erosion through protection and preservation of soil. Sediment controls are designed to remove sediment from runoff before the runoff is discharged from the site. Sediment

and erosion controls can be further divided into two major classes of controls: stabilization practices and structural practices. Major types of sediment and erosion practices are summarized below. Permittees should also consider the construction of new projects in phases to minimize the amount of bare soil which is exposed at one time and the amount of stabilization or structural controls that would be required.

Stabilization Practices

Stabilization of exposed soil is one of the best means to minimize erosion and sedimentation. Stabilization refers to covering or maintaining an existing cover over soil. Vegetative cover includes grass, trees, vines, shrubs, etc. Stabilization measures can also include non-vegetative controls such as geotextiles, riprap, or gabions (wire mesh boxes filled with rock). Mulches such as straw or bark can also be effective, especially when used with vegetation. Stabilization reduces erosion potential by absorbing the force of raindrops that would otherwise erode unprotected soil; by allowing water to infiltrate into the ground instead of running off the surface; and by slowing the velocity of runoff, allowing sediment to filter out before reaching surface waters. Stabilization reduces the levels of suspended sediment in discharges and receiving waters. Examples of stabilization measures include, but are not limited to, those summarized below.

- **Temporary Seeding.** The seeding of temporary vegetation provides a vegetative cover in areas where earth-disturbing activities have temporarily ceased, but will resume later in the construction project. Without temporary stabilization, soil can be exposed to precipitation for an extended period leaving it vulnerable to erosion, even though earth-disturbing activities are not occurring on these areas. Temporary seeding practices have been found to be up to 95% effective in reducing erosion.
- **Permanent Seeding.** Establishing a permanent and sustainable ground cover at a site stabilizes the soil and reduces sediment in runoff. Permanent ground cover also provides aesthetic benefits, in addition to the environmental protection.
- **Mulching.** Mulching is often combined with permanent and temporary seeding. Where temporary or permanent seeding is not yet established or is not feasible, spreading plant residues or other suitable materials on the soil surface can stabilize exposed soil. Although generally not as effective as vegetation, mulching by itself provides a measure of temporary erosion control. Mulching in conjunction with seeding provides erosion protection prior to the onset of plant growth. In addition, mulching protects newly applied seeds, providing a higher likelihood of successful vegetation. To maintain its effectiveness, mulch should be anchored to resist wind and rain displacement.
- **Sod Stabilization.** Sod stabilization involves establishing long-term stands of grass by planting sod on exposed surfaces. When maintained properly, sod can be more than 99% effective in reducing erosion, and is the most immediately effective vegetation method available. However, the cost of sod stabilization (relative to other vegetative

controls) typically limits its use to situations where a quick vegetative cover is desired (e.g., steep or erodible slopes). Sod is also sensitive to climate and may require intensive watering and fertilization.

- **Vegetative Buffer Strips.** Vegetative buffer strips are areas where the natural vegetation has been left undisturbed. They are encouraged in areas located at the top and bottom of a slope, outlining property boundaries or adjacent to receiving waters such as streams or wetlands. Vegetative buffer strips can slow runoff at critical locations, decreasing erosion and allowing sedimentation. They can be especially useful for very narrow linear construction projects such as underground utilities or pipelines.
- **Preservation of Trees.** This practice involves preserving selected trees already on-site prior to development. Mature trees provide extensive canopy and root systems, which protect and hold soil in place. Shade trees also keep soil from drying rapidly, decreasing the soil's susceptibility to erosion. Measures taken to protect trees can vary significantly, from simply installing tree armor and fences to more complex measures such as building retaining walls and tree wells.
- **Contouring and Protecting Sensitive Areas.** Contouring refers to the practice of building in harmony with the natural flow and contour of the land. By minimizing changes in the natural contour of the land, existing drainage patterns are preserved as much as possible, reducing erosion. Minimizing the amount of regrading will also reduce the amount of disturbed soil. Preserving sensitive areas, such as steep slopes and wetlands, should also be a priority. The disturbance of soil on steep slopes should be avoided due to vulnerability to erosion. Wetlands should be protected because they provide flood protection, pollution mitigation, and essential aquatic habitat. This permit does not allow the disturbance of wetlands. The permittee must contact the US Army Corps of Engineers at (605) 224-8531 to determine any requirements for wetlands.

Structural Practices

Structural practices have several objectives. First, structural practices can be designed to divert water from flowing on disturbed areas where erosion may occur. This involves diverting runoff from undisturbed, up-slope areas through use of earth dikes, temporary swales, perimeter dikes, or other diversions to stable areas. Another objective of structural practices may be to remove sediment before the runoff leaves the site. Methods for removing sediment from runoff include diverting flows to a trapping or storage device or filtering flows through on-site silt fences. All structural practices require proper maintenance (e.g., removal of collected sediment) to remain functional and should be designed to avoid presenting a safety hazard, especially in areas frequented by humans and wildlife. Structural practices include, but are not limited to, those summarized below:

- **Earth Dike.** Earth dikes are temporary berms or ridges of compacted soil that channel water to a desired location. Earth dikes should be stabilized with vegetation or an equally effective method.
- **Silt Fence.** Silt fences are a barrier of geotextile fabric (filter cloth) used to intercept sediment in runoff. They must be firmly anchored and may require additional support, such as reinforcing with wire mesh. Used alone, silt fences are usually inappropriate for flows of concentrated high volume or high velocity. Silt Fences must be carefully maintained to ensure structural stability and be cleaned of sediment as it accumulates.
- **Drainage Swales.** A drainage swale is a channel lined with grass, riprap, asphalt, concrete or other materials. Swales are installed to convey runoff without causing erosion.
- **Sediment Traps.** Sediment traps are installed in drainage pathways, at storm drain inlets, or other discharge points from disturbed areas.
- **Check Dams.** Check dams are small temporary dams constructed across a swale or drainage ditch to reduce the velocity of runoff, thereby reducing erosion in the swale or ditch.
- **Level Spreader.** Level spreaders are outlets for dikes and flow channels consisting of an excavated depression that converts a concentrated runoff into a diffuse flow and releases it onto areas stabilized by existing vegetation.
- **Subsurface Drain.** Subsurface drains transport runoff to an area where the water can be managed effectively. Drains can be made of tile, pipe, or tubing.
- **Pipe Slope Drain.** A pipe slope drain is a temporary runoff conveyance running down a slope to prevent erosion on the face of the slope.
- **Storm Drain Inlet Protection.** Storm drain inlet protection reduces sediment entering storm drainage systems prior to permanent stabilization of disturbed areas. Examples include a sediment filter or an excavated detention area around a storm drain inlet.
- **Rock Outlet Protection.** Rock protection placed at a storm water outlet can reduce the depth and velocity of water so the flow will not cause scouring or downstream erosion.
- **Other Controls.** Examples of other controls include temporary sedimentation basins, sump pits, entrance stabilization, waterway crossings and wind breaks.

Storm Water Management Measures

Construction frequently causes significant alterations in the characteristics of the affected land. One such change is a decrease in the overall permeability of the site, which can dramatically affect the site's flow patterns. An increase in runoff may increase the amount of pollutants carried by the runoff. In addition, some activities (e.g., automobile travel on newly built roads) can result in higher pollutant concentrations in runoff compared to pre-construction levels. While this permit only addresses the installation of storm water management controls, the operation and maintenance, and the function, of such structures after construction activities have completed should also be considered. **The county or municipal authority in the area of the construction should always be consulted when drainage changes are anticipated.**

Traditional storm water management controls attempt to limit increases in the amount of runoff and pollution discharged from land impacted by construction. A summary of some storm water management controls is provided below.

- **On-Site Infiltration.** Encouraging infiltration, through measures such as trenches or basins, can reduce the volume and pollutant loadings of storm water discharges from a site. Infiltration structures tend to reduce impacts to an area's natural hydrologic characteristics. If properly designed and installed, infiltration structures can reduce high flows, recharge the groundwater, reduce storm water discharge volumes and pollutant loads, and inhibit downstream erosion.
- **Flow Reduction by Vegetation or Natural Depressions.** Vegetation or natural depressions can remove pollutants, improve infiltration, and reduce erosion. The use of vegetation can protect habitats and enhance the appearance of a site. These vegetative measures include grass swales and filter strips as well as trees that are either preserved or planted during construction. Incorporating check dams into flow paths can provide additional infiltration and flow reduction. Given their limited capacity to accept large volumes of runoff, vegetative controls should usually be used in combination with other storm water devices. In general, the costs of vegetative controls are less than for other storm water measures.
- **Outfall Velocity Reduction Devices.** Outfall velocity reduction devices include riprap and stone or concrete flow spreaders. They slow the flow of water discharged from a site, reducing erosion.
- **Retention Structures/Artificial Wetlands.** Retention structures are ponds and artificial wetlands that are designed to maintain a permanent pool of water. Properly installed and maintained retention structures (also known as wet ponds) and artificial wetlands can achieve a high removal rate of sediment, biochemical oxygen demand (BOD), organic nutrients, and metals. They are most cost-effective when used to control runoff from larger, intensively developed sites. These structures rely on settling and biological processes to remove pollutants. Retention ponds and artificial wetlands can

also become wildlife habitats, recreation and landscape features, and increase local property values. While wetlands can be one of the most effective long-term storm water management measures, they may also cause problems at certain sites. Public safety and sound engineering judgement are stressed in the implementation of any storm water measure, control or best management practice.

- **Water Quality Detention Structures.** Storm water detention structures, which include extended detention ponds, control the rate at which water drains after a storm event. Extended detention ponds are usually designed to completely drain within 24 to 48 hours and to remain dry at other times. These structures can provide pollutant removal efficiencies similar to those of retention ponds. Extended detention systems are typically designed to provide both water quality and water quantity (flood control) benefits.

Housekeeping Best Management Practices (BMPs)

Pollutants can also be discharged in storm water from construction sites because of poor housekeeping. Construction site Storm Water Pollution Prevention Plans (SWPPPs) should address the following to prevent the discharge of pollutants:

- Designate and control areas for equipment maintenance and repair;
- Provide waste receptacles at convenient locations and regular collection of wastes;
- Locate equipment wash down areas on site, and provide appropriate control of washwater to prevent unauthorized dry weather discharges and avoid mixing with storm water;
- Provide protected storage areas for chemicals, paints, solvents, fertilizers, gasoline, and other potentially toxic materials; and
- Provide adequately maintained sanitary facilities.

SELF-MONITORING REQUIREMENTS

The permittee must ensure that qualified personnel inspect the site at least once every seven days and within 24 hours after any rain event that is 0.5 inches or greater or a snowmelt event that causes surface erosion. Where runoff is unlikely due to winter conditions (e.g. the site is covered with snow, ice, or frozen ground), such inspections shall be conducted at least once every month. The inspection shall include all disturbed areas of the construction site that have not been finally stabilized, structural control measures, areas used for storage of materials, and locations where vehicles enter or exit the site. These areas shall be inspected for evidence of, or the potential for, pollutants entering the drainage system and erosion. Sediment control measures shall be inspected to ensure that they are operating correctly and that sediment is not tracked offsite. Stabilized areas should also be inspected to ensure that stabilization measures are still in place and effective. For all of these inspections, records must be kept on file and made available upon request.

The department also recommends that permittees perform a “walk through” inspection of the construction site before any anticipated storm event that could potentially cause a significant amount of runoff. These types of inspections help to ensure the effective implementation of sediment and erosion controls.

Based on the results of the inspections, the pollution prevention plan shall be revised and modified as appropriate, and modification of control measures shall be implemented in a timely manner, but in no case more than seven days after the inspection.

This permit does not require effluent monitoring as a permit requirement nor as an application requirement. An adequate, fully implemented Storm Water Pollution Prevention Plan should be sufficient to control water quality impacts. Therefore, sampling and testing of storm water for specific parameters is not required on a routine basis under this permit. However, the Secretary reserves the right to require sampling and testing on a case-by-case basis, in the event that there is reason to suspect that compliance with the storm water pollution prevention plan is a problem, or to measure the effectiveness of the BMPs in removing pollutants in the effluent.

MANAGEMENT REQUIREMENTS

The pollution prevention plan and a copy of DENR’s letter granting coverage under this permit must be maintained on site, or made readily available, from the date construction activities are initiated until final stabilization is achieved and coverage under the permit is terminated. The permittee shall retain copies of storm water pollution prevention plans and all reports required by this permit, and records of all data used to complete the Notices of Intent and Termination for this permit, for a period of at least three years from the date that the site is finally stabilized. This period may be extended by request of the Secretary at any time.

If requested, the permittee shall submit the storm water pollution prevention plan to the Secretary, EPA, or the local agency approving sediment and erosion control plans, grading plans or storm water management plans. In the case of a storm water discharge to a municipal separate storm sewer system (MS4), the permittee shall submit the storm water pollution prevention plan to the municipal operator of the system upon request.

ADDITIONAL INFORMATION FOR DEVELOPMENTS AND “PHASED” PROJECTS

The permittee, operator, owner, developer, home builder(s), property owners association, etc., separately or collectively, must retain coverage for subdivision developments or other phased developments until all disturbance activity, including individual home construction (if part of the original plan), is complete.

In many cases, a common plan of development or sale consists of many small construction projects that collectively add up to five or more acres (effective January 1, 2003, this will expand to include one or more acres) of total disturbed land. For example, an original common plan of development for a residential subdivision might lay out the streets, house lots, and areas for parks, schools and commercial development that the developer plans to build or sell to others for

development. All these areas would remain part of the common plan of development or sale until the intended construction is complete. After this initial plan is completed for a particular parcel, any subsequent development or redevelopment of that parcel would be regarded as a new plan of development, and would then be subject to the acreage cutoff for storm water permitting purposes.

If individual lots, which were included as a portion of the original common plan, are sold before completion of the entire plan, developers shall ensure that final stabilization is achieved for that lot, as defined in the permit, or that temporary stabilization has been reached prior to transfer of control and that the new owners are informed of the importance of achieving final stabilization on the site. Documentation of any and all transfers should be maintained with the pollution prevention plan, and the plan shall be updated to reflect changes in the covered area. A commercial homebuilder must submit a new Notice of Intent for coverage under the permit for any construction activities occurring within the common plan (for example, construction of “spec” homes).

TERMINATION OF COVERAGE

After construction activities are completed in an area, it must be permanently stabilized as soon as possible to prevent further soil erosion. When construction activities are complete and final stabilization has been achieved, the permittee is required to submit a Notice of Termination to DENR. The Notice of Termination indicates that all earthmoving activities have ended, and the site has achieved final stabilization as required by the permit. Coverage under the permit must be retained until all disturbed areas have achieved final stabilization, as defined in the permit.

ENDANGERED SPECIES

No listed endangered species are expected to be impacted by the activities related to this general permit.

GENERAL PERMIT DURATION

The permit shall be five years in duration. Periodically during the term of this permit and at the time of renewal, the permittee may be requested to reaffirm the eligibility of the permitted site to discharge under this general permit.

PERMIT CONTACT

Any questions pertaining to this Statement of Basis can be directed to Stacy J. Reed, Natural Resources Project Engineer at 1-800-SDSTORM (737-8676).

April 22, 2002

ATTACHMENT A

Best Management Practices

Construction Site Best Management Practices (BMPs)

BEST MANAGEMENT PRACTICE	USES
Block and Gravel Inlet Protection	<ul style="list-style-type: none"> • Used in small drainage areas before the area has been permanently stabilized • Where there is danger of silting in an inlet
Buffer Zones	<ul style="list-style-type: none"> • Floodplains, next to wetlands, along stream banks, and on steep, unstable slopes
Check Dams	<ul style="list-style-type: none"> • Across swales or drainage ditches to reduce the velocity of flow
Dust Control	<ul style="list-style-type: none"> • Used where open dry areas of soil are anticipated on the site
Drainage Swale or Earth Dike	<ul style="list-style-type: none"> • Divert upslope flows from disturbed areas and to divert runoff to a stabilized outlet • To reduce the length of slope the runoff will cross • At the perimeter of the construction site to prevent sediment-laden runoff from leaving the site • To direct sediment-laden runoff to a sediment trapping device
Excavated Gravel Inlet Protection	<ul style="list-style-type: none"> • Used in small drainage areas before the area has been permanently stabilized • Where there is danger of silting in an inlet • Where ponds around the inlet structure could be a problem to traffic on site
Filter Fabric Inlet Protection	<ul style="list-style-type: none"> • Used in small drainage areas before the area has been permanently stabilized • Where there is danger of silting in an inlet
Geotextiles	<ul style="list-style-type: none"> • Stabilize the flow on channels and swales • Used on recently planted slopes to protect seedlings until they become established
Mulching	<ul style="list-style-type: none"> • Areas where slopes are steeper than 2:1 • Where runoff is flowing across the area • When seedlings need protection from bad weather
Permanent Seeding and Planting	<ul style="list-style-type: none"> • Areas where soils are unstable because of their texture, structure, water table, winds, or slopes • Filter strips, buffer areas, vegetated swales, steep slopes, and stream banks

Pipe Slope Drain	<ul style="list-style-type: none"> • On slopes before permanent storm water drainage structures have been installed • Where diversion measures have been used to concentrate flows • On any slope where concentrated runoff crossing the face of the slope may cause gullies, channel erosion, or saturation of slide-prone soils • As an outlet for a natural drainageway
Silt Fence	<ul style="list-style-type: none"> • Immediately upstream of the point(s) of runoff discharge from a site before flow becomes concentrated • Below disturbed areas where runoff may occur in the form of overland flow
Stabilized Construction Entrance	<ul style="list-style-type: none"> • Wherever vehicles are leaving a construction site and enter onto a public road • At any unpaved entrance/exit where there is risk of transporting mud or sediment onto paved roads
Temporary Sediment Trap	<ul style="list-style-type: none"> • At the outlet of the perimeter controls installed during the first stage of construction • At the outlet of any structure which concentrates sediment-laden runoff, e.g. at the discharge point of diversions, channels, slope drains, or other runoff conveyances • Above a storm water inlet that is in line to receive sediment-laden runoff
Temporary Seeding	<ul style="list-style-type: none"> • Areas which have been disturbed by construction and which are likely to be redisturbed, e.g. denuded areas, soil stockpiles, dikes, dams, sides of sediment basins, and temporary roadbanks

Information obtained from the Environmental Protection Agency's "Storm Water Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices" (September 1992).

Response to Comments - Storm Water Construction General Permit

EPA Comments

1. Definitions (Section 1.0)

- 1) Definition #15 - Storm Water Associated with Construction Activity - could be expanded as such "disturbance of five or more acres of total land area or which may be part of a larger common plan of development or sale" *encompassing five or more acres* - The qualifying size for projects of a common plan of development or sale wasn't clear. This comment is also applicable for Definition #16 - "Storm Water Associated with Small Construction Activity."

This clarification has been made.

- 2) Definition #20 - Waters of the state - This definition could be expanded to include the fact that waters of the state *can include dry channels*. In addition, this definition could be broken down to include both receiving waters and ultimate receiving waters, as the NOI requests this information separately.

The definition in the general permit is consistent with the definition of "Waters of the State" as defined in the Administrative Rules of South Dakota. Therefore, the definition will remain as proposed.

2. **Discharges Covered (Section 2.0)** - Unless specified, this permit does not include storm water discharges from support activities related to a construction site (e.g., concrete or asphalt batch plants, equipment staging yards, storage areas, etc.). If the permit is not intended to cover these activities as a whole, it should be noted how the permittee will assume responsibility for these discharges. If the permit is intended to cover support activities, then some sort of mention should be made as to how these discharges are accounted for (i.e., in the pollution prevention plan).

As stated in Section 4.2.2, "Offsite material storage areas used solely by the permitted project are considered a part of the project and shall be addressed in the pollution prevention plan." Concrete or asphalt batch plants require coverage under one of the multimedia (air quality, surface water quality, and minerals & mining) general permits specific to those industrial activities and are not covered under this permit.

3. **Obtaining Authorization (Section 2.5)** - Storm water pollution prevention plans should be fully developed and implemented upon submitting the Notice of Intent to be covered by the general permit. The operator should comply with the terms and schedule of the plan beginning with the initiation of construction activities. It is important to note in section 2.5 that the pollution prevention plan is in fact part of

the authorization process and the pollution prevention plan should be developed as specified in section 4.0.

The storm water pollution prevention plan must be developed and implemented before any land disturbing activities are initiated, but its development is not necessarily required before the submittal of a Notice of Intent (NOI). There are instances where a Notice of Intent is submitted for a project long before a project is initiated, and a plan may not yet be developed. Therefore, it will not be considered a condition of submitting the NOI, but must be developed, as specified in Section 4.0, prior to the start of construction.

4. Pollution Prevention Plan (Section 4.0)

- 1) The pollution prevention plan should include the location and description of the potential pollution sources. This information is not specifically referenced under the site map or site description requirements.**

The site description and site map requirements are what is required in addition to “a description of potential pollutant sources.” Therefore, the potential pollution sources are addressed and are, in fact, the foremost requirement for the pollution prevention plan. Additional requirements will not be listed.

- 2) Specific limitations could be added to the Pollution Plan section to further clarify some standard practices and procedures specific to the CGP. For example:
 - a. Concrete wash water shall not be discharged into state waters / storm systems
 - b. The Secretary reserves the right to require sampling and testing
 - c. Off-site tracking of sediments should be minimized

As concrete wash water would be considered a non-storm water discharge, it will not be addressed further in the plan requirements.

Section 6.5, Duty to Provide Information, provides a means for the Secretary to require sampling if needed to determine compliance with this permit.

The need to minimize off-site tracking is addressed on Page 10 of the permit in Other Controls.

5. **Standard Permit Conditions (Section 6.0)** - Under section 1, Duty to comply, text similar to the following sentence should be added to clarify the role of local programs: *Terms of this permit do not supercede local regulations.*

The following was added to this section (6.1.3):

3. The permittee is responsible for complying with all local ordinances and requirements. Local governments may have additional or more stringent requirements than those included in this permit.
6. **Requiring an Individual Permit (Section 6.11)** - I would recommend adding a #6 case whereby an individual permit may be required – The size of the construction site. In specific cases whereby the size of the construction site or consolidated project may pose specific environmental problems, the SD DENR may want to have the ability to require an individual permit.

The goal of the storm water program and subsequent permits is ultimately the protection of the environment. If all permit conditions are being followed, which should achieve the program goal, project size alone would not justify requiring an individual permit. Therefore, the five provisions already included in this section are sufficient to address conditions where an individual permit may be required.

7. **Permit Violations (Section 6.?)** - **The proposed permit does not have any resulting enforcement actions. The SD CGP should include information related to violations (i.e., what happens when people fail to comply and when does the SD DENR have the right to modify, suspend or revoke a permit). This information is missing from the permit and will need to be added. This should be broken down to include civil vs. criminal (i.e., negligence/ false statements) penalties, and the right of the Secretary to modify, suspend or revoke a permit.**

On the recommendation of the State Attorney General Office counsel, the previous permit language specifically addressing civil and criminal penalties was modified to what is proposed in Section 6.1.2, which refers to South Dakota Codified Law, Chapter 34A-2.

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RECYCLED / RECOVERED MATERIALS

12/01

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SECTION 01670

RECYCLED / RECOVERED MATERIALS

12/01

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

40 CFR 247

Comprehensive Procurement Guideline for
Products Containing Recovered Materials

1.2 OBJECTIVES

Government procurement policy is to acquire, in a cost effective manner, items containing the highest percentage of recycled and recovered materials practicable consistent with maintaining a satisfactory level of competition without adversely affecting performance requirements or exposing suppliers' employees to undue hazards from the recovered materials. The Environmental Protection Agency (EPA) has designated certain items which must contain a specified percent range of recovered or recycled materials. EPA designated products specified in this contract comply with the stated policy and with the EPA guidelines. The Contractor shall make all reasonable efforts to use recycled and recovered materials in providing the EPA designated products and in otherwise utilizing recycled and recovered materials in the execution of the work.

1.3 EPA DESIGNATED ITEMS INCORPORATED IN THE WORK

Various sections of the specifications contain requirements for materials that have been designated by EPA as being products which are or can be made with recovered or recycled materials. These items, when incorporated into the work under this contract, shall contain at least the specified percentage of recycled or recovered materials unless adequate justification (non-availability) for non-use is provided. When a designated item is specified as an option to a non-designated item, the designated item requirements apply only if the designated item is used in the work.

1.4 EPA PROPOSED ITEMS INCORPORATED IN THE WORK

Products other than those designated by EPA are still being researched and are being considered for future Comprehensive Procurement Guideline (CPG) designation. It is recommended that these items, when incorporated in the work under this contract, contain the highest practicable percentage of recycled or recovered materials, provided specified requirements are also met.

1.5 EPA LISTED ITEMS USED IN CONDUCT OF THE WORK BUT NOT INCORPORATED IN

THE WORK

There are many products listed in 40 CFR 247 which have been designated or proposed by EPA to include recycled or recovered materials that may be used by the Contractor in performing the work but will not be incorporated into the work. These products include office products, temporary traffic control products, and pallets. It is recommended that these non-construction products, when used in the conduct of the work, contain the highest practicable percentage of recycled or recovered materials and that these products be recycled when no longer needed.

-- End of Section --

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SECTION 01781

OPERATION AND MAINTENANCE DATA

12/01

PART 1 GENERAL

1.1 SUBMISSION OF OPERATION AND MAINTENANCE DATA

Submit Operation and Maintenance (O&M) Data specifically applicable to this contract and a complete and concise depiction of the provided equipment, product, or system. Organize and present information in sufficient detail to clearly explain O&M requirements at the system, equipment, component, and subassembly level. Include an index preceding each submittal. Submit in accordance with this section and Section 01330, "Submittal Procedures."

1.1.1 Package Quality

Documents must be fully legible. Poor quality copies and material with hole punches obliterating the text or drawings will not be accepted.

1.1.2 Package Content

Data package content shall be as shown in the paragraph titled "Schedule of Operation and Maintenance Data Packages." Comply with the data package requirements specified in the individual technical sections, including the content of the packages and addressing each product, component, and system designated for data package submission.

1.1.3 Changes to Submittals

Manufacturer-originated changes or revisions to submitted data shall be furnished by the Contractor if a component of an item is so affected subsequent to acceptance of the O&M Data. Changes, additions, or revisions required by the Contracting Officer for final acceptance of submitted data, shall be submitted by the Contractor within 30 calendar days of the notification of this change requirement.

1.2 TYPES OF INFORMATION REQUIRED IN O&M DATA PACKAGES

1.2.1 Operating Instructions

Include specific instructions, procedures, and illustrations for the following phases of operation:

1.2.1.1 Safety Precautions

List personnel hazards and equipment or product safety precautions for all operating conditions.

1.2.1.2 Operator Prestart

Include procedures required to set up and prepare each system for use.

1.2.1.3 Startup, Shutdown, and Post-Shutdown Procedures

Provide narrative description for Startup, Shutdown and Post-shutdown operating procedures including the control sequence for each procedure.

1.2.1.4 Normal Operations

Provide narrative description of Normal Operating Procedures. Include Control Diagrams with data to explain operation and control of systems and specific equipment.

1.2.1.5 Emergency Operations

Include Emergency Procedures for equipment malfunctions to permit a short period of continued operation or to shut down the equipment to prevent further damage to systems and equipment. Include Emergency Shutdown Instructions for fire, explosion, spills, or other foreseeable contingencies. Provide guidance and procedures for emergency operation of all utility systems including required valve positions, valve locations and zones or portions of systems controlled.

1.2.1.6 Operator Service Requirements

Include instructions for services to be performed by the operator such as lubrication, adjustment, inspection, and recording gage readings.

1.2.1.7 Environmental Conditions

Include a list of Environmental Conditions (temperature, humidity, and other relevant data) that are best suited for the operation of each product, component or system. Describe conditions under which the item equipment should not be allowed to run.

1.2.2 Preventive Maintenance

Include the following information for preventive and scheduled maintenance to minimize corrective maintenance and repair.

1.2.2.1 Lubrication Data

Include preventative maintenance lubrication data, in addition to instructions for lubrication provided under paragraph titled "Operator Service Requirements":

- a. A table showing recommended lubricants for specific temperature ranges and applications.
- b. Charts with a schematic diagram of the equipment showing lubrication points, recommended types and grades of lubricants, and capacities.
- c. A Lubrication Schedule showing service interval frequency.

1.2.2.2 Preventive Maintenance Plan and Schedule

Include manufacturer's schedule for routine preventive maintenance, inspections, tests and adjustments required to ensure proper and economical operation and to minimize corrective maintenance. Provide manufacturer's projection of preventive maintenance work-hours on a daily, weekly, monthly, and annual basis including craft requirements by type of craft. For periodic calibrations, provide manufacturer's specified frequency and

procedures for each separate operation.

1.2.3 Corrective Maintenance (Repair)

Include manufacturer's recommended procedures and instructions for correcting problems and making repairs.

1.2.3.1 Troubleshooting Guides and Diagnostic Techniques

Include step-by-step procedures to promptly isolate the cause of typical malfunctions. Describe clearly why the checkout is performed and what conditions are to be sought. Identify tests or inspections and test equipment required to determine whether parts and equipment may be reused or require replacement.

1.2.3.2 Wiring Diagrams and Control Diagrams

Wiring diagrams and control diagrams shall be point-to-point drawings of wiring and control circuits including factory-field interfaces. Provide a complete and accurate depiction of the actual job specific wiring and control work. On diagrams, number electrical and electronic wiring and pneumatic control tubing and the terminals for each type, identically to actual installation configuration and numbering.

1.2.3.3 Maintenance and Repair Procedures

Include instructions and a list of tools required to repair or restore the product or equipment to proper condition or operating standards.

1.2.3.4 Removal and Replacement Instructions

Include step-by-step procedures and a list required tools and supplies for removal, replacement, disassembly, and assembly of components, assemblies, subassemblies, accessories, and attachments. Provide tolerances, dimensions, settings and adjustments required. Instructions shall include a combination of text and illustrations.

1.2.3.5 Spare Parts and Supply Lists

Include lists of spare parts and supplies required for maintenance and repair to ensure continued service or operation without unreasonable delays. Special consideration is required for facilities at remote locations. List spare parts and supplies that have a long lead-time to obtain.

1.2.4 Corrective Maintenance Work-Hours

Include manufacturer's projection of corrective maintenance work-hours including requirements by type of craft. Corrective maintenance that requires completion or participation of the equipment manufacturer shall be identified and tabulated separately.

1.2.5 Appendices

Provide information required below and information not specified in the preceding paragraphs but pertinent to the maintenance or operation of the product or equipment. Include the following:

1.2.6 Parts Identification

Provide identification and coverage for all parts of each component, assembly, subassembly, and accessory of the end items subject to replacement. Include special hardware requirements, such as requirement to use high-strength bolts and nuts. Identify parts by make, model, serial number, and source of supply to allow reordering without further identification. Provide clear and legible illustrations, drawings, and exploded views to enable easy identification of the items. When illustrations omit the part numbers and description, both the illustrations and separate listing shall show the index, reference, or key number that will cross-reference the illustrated part to the listed part. Parts shown in the listings shall be grouped by components, assemblies, and subassemblies in accordance with the manufacturer's standard practice. Parts data may cover more than one model or series of equipment, components, assemblies, subassemblies, attachments, or accessories, such as typically shown in a master parts catalog

1.2.6.1 Warranty Information

List and explain the various warranties and include the servicing and technical precautions prescribed by the manufacturers or contract documents in order to keep warranties in force. Include warranty information for primary components such as the compressor of air conditioning system.

1.2.6.2 Personnel Training Requirements

Provide information available from the manufacturers that is needed for use in training designated personnel to properly operate and maintain the equipment and systems.

1.2.6.3 Testing Equipment and Special Tool Information

Include information on test equipment required to perform specified tests and on special tools needed for the operation, maintenance, and repair of components.

1.2.6.4 Contractor Information

Provide a list that includes the name, address, and telephone number of the General Contractor and each Subcontractor who installed the product or equipment, or system. For each item, also provide the name address and telephone number of the manufacturer's representative and service organization most convenient to the project site. Provide the name, address, and telephone number of the product, equipment, and system manufacturers.

1.3 SCHEDULE OF OPERATION AND MAINTENANCE DATA PACKAGES

Furnish the O&M data packages specified in individual technical sections. The required information for each O&M data package is as follows:

1.3.1 Data Package 1

- a. Safety precautions
- b. Maintenance and repair procedures
- c. Warranty information

- d. Contractor information
- e. Spare parts and supply list

1.3.2 Data Package 2

- a. Safety precautions
- b. Normal operations
- c. Environmental conditions
- d. Lubrication data
- e. Preventive maintenance plan and schedule
- f. Maintenance and repair procedures
- g. Removal and replacement instructions
- h. Spare parts and supply list
- i. Parts identification
- j. Warranty information
- k. Contractor information

1.3.3 Data Package 3

- a. Safety precautions
- b. Normal operations
- c. Emergency operations
- d. Environmental conditions
- e. Lubrication data
- f. Preventive maintenance plan and schedule
- g. Troubleshooting guides and diagnostic techniques
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- i. Maintenance and repair procedures
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- k. Spare parts and supply list
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- m. Warranty information
- n. Testing equipment and special tool information
- o. Contractor information

1.3.4 Data Package 4

- a. Safety precautions
- b. Operator prestart
- c. Startup, shutdown, and post-shutdown procedures
- d. Normal operations
- e. Emergency operations
- f. Operator service requirements
- g. Environmental conditions
- h. Lubrication data
- i. Preventive maintenance plan and schedule
- j. Troubleshooting guides and diagnostic techniques
- k. Wiring diagrams and control diagrams
- l. Maintenance and repair procedures
- m. Removal and replacement instructions
- n. Spare parts and supply list
- o. Corrective maintenance man-hours
- p. Parts identification
- q. Warranty information
- r. Personnel training requirements
- s. Testing equipment and special tool information
- t. Contractor information

1.3.5 Data Package 5

- a. Safety precautions
- b. Operator prestart
- c. Start-up, shutdown, and post-shutdown procedures
- d. Normal operations
- e. Environmental conditions
- f. Preventive maintenance plan and schedule
- g. Troubleshooting guides and diagnostic techniques

- h. Wiring and control diagrams
- i. Maintenance and repair procedures
- j. Spare parts and supply list
- k. Testing equipments and special tools
- l. Warranty information
- m. Contractor information

1.4 O & M TRAINING

The Contractor shall provide operational and maintenance training for all systems furnished under this contract. The training will be for the operating and maintenance personnel. The training shall be put on by the system manufacturer. The training shall not take place until the operation and maintenance manuals are submitted and approved. The Contractor shall video tape the training session on VHS tapes and provide 2 copies of the tapes to the Government.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

-- End of Section --

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ATTACHMENT NO. 1

CODE ANALYSIS

UNIFORM BUILDING CODE (UBC) AND NFPA "LIFE SAFETY CODE" **ANALYSIS**

1. NFPA 101 "LIFE SAFETY CODE"

1.1. CLASSIFICATION OF OCCUPANCY: _____

HAZARD OF CONTENTS:

LOW _____

ORDINARY _____

HIGH _____

1.2. FIRE RESISTIVE REQUIREMENTS:

EXTERIOR WALLS: _____ HRS _____

INTERIOR WALLS: _____ HRS _____

STRUCTURAL FRAME: _____ HRS _____

VERTICAL OPENINGS: _____ HRS _____

FLOORS: _____ HRS _____

ROOFS: _____ HRS _____

EXTERIOR DOORS: _____ HRS _____

EXTERIOR WINDOWS: _____ HRS _____

BOILER ROOM ENCLOSURE _____ HRS _____

OTHER (LIST) _____ HRS _____
_____ HRS _____
_____ HRS _____

1.3. MEANS OF EGRESS:

OCCUPANCY LOAD FACTOR: _____

OCCUPANCY	FACTOR	ACTUAL AREA	ACTUAL LOAD
-----------	--------	-------------	-------------

_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

1.4. NUMBER OF EXITS REQUIRED: _____

1.5. MINIMUM WIDTH OF EXITS:

CALCULATED: _____

ACTUAL: _____

1.6. MAXIMUM ALLOWABLE TRAVEL DISTANCE TO EXIT: _____

WITH SPRINKLERS: _____

1.7. EXIT DOORS:

MINIMUM WIDTH ALLOWED: _____

MAXIMUM LEAF WIDTH ALLOWED: _____

WIDTH REQUIRED FOR NO.OF OCCUPANTS: _____

1.8. EXIT CORRIDORS:

MAX. COMMON PATH OF TRAVEL: _____

MINIMUM ALLOWABLE WIDTH: _____
REQUIRED TO HAVE EXIT AT EACH END OF CORRIDOR? _____

DEAD END CORRIDORS ALLOWED? _____

MAXIMUM LENGTH: _____

WALL FIRE RESISTANCE REQUIRED: _____

DOORS & FRAME FIRE RESISTANCE REQUIRED: _____

1.9. STAIRS:

MINIMUM WIDTH _____ FOR OCCUP. LOAD OF _____

MINIMUM WIDTH _____ FOR OCCUP. LOAD OF _____

MINIMUM WIDTH _____ FOR OCCUP. LOAD OF _____

MINIMUM WIDTH _____ FOR OCCUP. LOAD OF _____

MAX. RISER ALLOWED: _____

MINIMUM TREAD ALLOWED: _____

LANDINGS:

MIN. SIZE: _____

MAX. VERTICAL DIST. BETWEEN LANDINGS: _____

REQUIRED HEIGHT OF RAILINGS: _____

HANDRAILS:

REQUIRED AT EACH SIDE? _____

INTERMEDIATE RAIL REQUIRED? _____

HEIGHT ABOVE NOSING _____

INTERMEDIATE RAIL REQUIRED? _____

MAX. SPACE ALLOWED BETWEEN RAILS: _____

STAIR ENCLOSURE REQUIRED? _____

STAIR TO ROOF REQUIRED? _____

STAIR TO BASEMENT REQUIRED? _____

1.10. HATCHWAY ACCESS TO ROOF REQUIRED? _____

1.11. LADDER ACCESS TO ROOF REQUIRED? _____

1.12. HORIZONTAL EXIT REQUIREMENTS: _____

1.13. PROTECTION OF OPENINGS NEAR EXTERIOR STAIR EXIT DOORS:

1.14. SMOKEPROOF ENCLOSURE REQUIRED: _____

1.15. RAMPS:

MAX. SLOPE TO USE AS EXIT _____

HANDRAILS REQUIRED? _____

1.16. COMMENTS:

DESIGNER: _____

FOLLOWING IS A LIST OF ADDITIONAL "NFPA" CODES THAT ARE COMMONLY USED. INDICATE WHICH OF THESE CODES ARE USED AND ADD THOSE REQUIREMENTS TO THIS ANALYSIS.

MIL HDBK-1008C	FIRE PROTECTION FOR FACILITIES, ENGR, DESIGN AND CONSTRUCTION.
NFPA 10	FIRE EXTINGUISHERS, PORTABLE
NFPA 75	COMPUTER/DATA PROCESSING FACILITIES
NFPA 80	FIRE DOORS AND WINDOWS
NFPA 88A	PARKING STRUCTURES
NFPA 409	AIRCRAFT HANGARS
AF ETL 93-5	FIRE PROTECTION CRITERIA FOR ELECTRONIC EQUIPMENT INSTALLATIONS.

ATTACHMENT NO. 2

ADA ARCHITECTURAL DESIGN CHECKLIST

Project Name: _____
Project Location: _____
Design Phase: _____

ITEM NO.	INCORP	INCORP LATER	N/A
1. Established with the Base/owner of the facility the for handicap accessibility.	_____	_____	_____
2. Received a waiver for no handicap accessibility requirements on the facility.	_____	_____	_____
3. Facility is designed utilizing: New Construction Criteria	_____	_____	_____
Building Alteration Criteria	_____	_____	_____
Historic Building Preservation Criteria:	_____	_____	_____
4. Accessible Route (egress/corridors/halls/aisles). - Provided minimum fire egress routes.	_____	_____	_____
- Provided minimum site accessible routes.	_____	_____	_____
- Provided proper clearance widths.	_____	_____	_____
- Provided proper floor level changes.	_____	_____	_____
- Provided proper floor materials.	_____	_____	_____
- Provided protection from protruding objects.	_____	_____	_____
5. Ramps: - Maximum slopes less than 1:12	_____	_____	_____
- Maximum run less than 30 feet for 1:12 slopes	_____	_____	_____
40 feet for 1:16 slopes			
- Minimum clear width exceeds 36-inches.	_____	_____	_____
- Provided proper edge protection.	_____	_____	_____
- Provided handrails of proper configuration and diameter.	_____	_____	_____
- Provided proper handrail extensions at top and bottom of ramp.	_____	_____	_____
- Provided handrails at proper mounting heights.	_____	_____	_____
- Provided proper landings.	_____	_____	_____
- Provided proper cross slope on ramp surface.	_____	_____	_____
6. Stairs: - Protected the space below stairs from access by the blind.	_____	_____	_____
- Provided handrails of proper configuration and diameter.	_____	_____	_____
- Provided proper handrail extensions at top and bottom of stairs.	_____	_____	_____
- Provided handrails at proper mounting heights.	_____	_____	_____
- Provided treads greater than 11-inches in width.	_____	_____	_____
- Provided proper nosings.	_____	_____	_____

ITEM NO.	INCORP LATER	INCORP	N/A
7. Elevators:			
- Provided buttons and lanterns at the proper mounting height.	_____	_____	_____
- Provided Braille characters.	_____	_____	_____
- Provided proper door widths.	_____	_____	_____
- Provided proper clearance inside elevator car.	_____	_____	_____
8. Doors And Hardware:			
- Provided proper door widths.	_____	_____	_____
- Provided proper clearance on both sides of jambs.	_____	_____	_____
- Entrance vestibules provided with adequate clearances.	_____	_____	_____
- Provided levers on locksets and exit hardware.	_____	_____	_____
- Provided closers with mechanical adjustments.	_____	_____	_____
- Provided accessible thresholds.	_____	_____	_____
- Provided protection plates on doors heavily used by wheel chair bound people.	_____	_____	_____
9. Toilet Facilities:			
- Provided proper floor clearance through out the toilet rooms.	_____	_____	_____
- Provided minimum number of required accessible fixtures.	_____	_____	_____
- Provided accessible toilet stalls.	_____	_____	_____
- Provided stall doors with correct direction of swing.	_____	_____	_____
- Provided accessible water closets.	_____	_____	_____
- Provided grab bars at accessible water closets.	_____	_____	_____
- Provided grab bars with correct configuration and dimension.	_____	_____	_____
- Provided accessible sinks/lavatories.	_____	_____	_____
- Provided accessible urinals.	_____	_____	_____
- Provided accessible water coolers and fountains.	_____	_____	_____
- Provided accessible mirrors.	_____	_____	_____
- Provided accessible toilet accessories at required locations.	_____	_____	_____
- Provided all fixtures and accessories at proper mounting heights and clearances.	_____	_____	_____
- Provided insulated or protected exposed pipes at lavatories.	_____	_____	_____
10. Shower/Tub Facilities:			
- Provided the minimum number of accessible showers/tubs.	_____	_____	_____
- Provided showers/tubs with grab bars.	_____	_____	_____
- Provided showers/tubs with seats as required.	_____	_____	_____
- Provided controls mounted at the proper height and location.	_____	_____	_____
- Provided proper clearances and dimensions in showers/tubs.	_____	_____	_____
- Provided proper floor clearance through out shower/tubs rooms.	_____	_____	_____
- Provided doors with correct direction of swing and clearance.	_____	_____	_____
11. Storage:			
- Provided accessible cabinets, shelves, closets, and drawers as required.	_____	_____	_____
- Provided proper clearance, mounting heights, and reach provisions.	_____	_____	_____

ITEM NO.	INCORP LATER	INCORP LATER	N/A
12. Telephones and Vending:			
- Provided the minimum number of required accessible public telephones.	_____	_____	_____
- Provided proper floor clearance around telephone.	_____	_____	_____
- Phone and controls mounted at proper heights and within reach.	_____	_____	_____
- Provided vending machines on an accessible route.	_____	_____	_____
- Provided vending machines with accessible clearances and protruding object safe guards.	_____	_____	_____
13. Fixed Or Built-in Seating And Tables:			
- Provided the minimum number of accommodations for accessibility in areas which required fixed furniture.	_____	_____	_____
- Provided proper floor clearance around furniture.	_____	_____	_____
- Provide proper knee space at tables.	_____	_____	_____
- Provided tables and counters with proper top surface heights.	_____	_____	_____
14. Assembly Areas:			
- Provided the minimum number of accessible seating spaces.	_____	_____	_____
- Provided seating which is easily accessible to emergency egress.	_____	_____	_____
- Provided companion seating.	_____	_____	_____
- Integrated and dispersed accessible seating with the rest of the seating.	_____	_____	_____
- Provided accessible dressing rooms.	_____	_____	_____
- Provided level floor surface at accessible seat locations.	_____	_____	_____
- Provided clear ground or floor space at accessible seat locations	_____	_____	_____
- Provided access to all performing areas and associated spaces.	_____	_____	_____
15. Dining Halls And Cafeterias:			
- Provided the minimum number of accessible dining spaces.	_____	_____	_____
- Provided accessible counters and bars.	_____	_____	_____
- Provided accessible aisles between tables or walls.	_____	_____	_____
- Provided clear floor space at accessible dining locations.	_____	_____	_____
- Provided accessible food service lines meeting minimum clearances and reaches.	_____	_____	_____
- Provided accessible tableware and condiment areas.	_____	_____	_____
- Provided raised speaker platform with protected edges.	_____	_____	_____
16. Medical Care Facilities:			
- At least 10% of the general patient rooms are accessible.	_____	_____	_____
- Provided the number of accessible patient rooms as required for specialized treatment, long term care, or alterations of existing patient rooms.	_____	_____	_____
- Provided at least one accessible entrance with weather protecting canopy or roof overhang.	_____	_____	_____
- Provided minimum clearances within the patient rooms and around the beds.	_____	_____	_____
- Provided accessible patient toilet/bath rooms.	_____	_____	_____

ADA ARCHITECTURAL DESIGN CHECKLIST

ATTACHMENT NO. 2 - 3

ITEM NO.	INCORP LATER	INCORP LATER	N/A
-------------	-----------------	-----------------	-----

17. Business And Mercantile:

- | | | | |
|--|-------|-------|-------|
| - Provided at least one accessible sales counter, services counter, teller, information window, etc. | _____ | _____ | _____ |
| - Security bollards when provided, do not prevent access or egress to people in wheel chairs. | _____ | _____ | _____ |

18. Libraries:

- | | | | |
|--|-------|-------|-------|
| - Provided access to all reading and stack areas, reference reference rooms, reserve areas, and special facilities or collections. | _____ | _____ | _____ |
| - Provided at least 5% or a minimum of one of each element or fixed seating, tables, or study carrels as accessible. | _____ | _____ | _____ |
| - Provided at least one lane of check out areas as accessible. | _____ | _____ | _____ |
| - Provided adequate clearance and reach distances at card catalogs and magazine displays. | _____ | _____ | _____ |
| - Provide stacks with minimum clear aisle width. | _____ | _____ | _____ |

19. Temporary Lodging:

- | | | | |
|---|-------|-------|-------|
| - All common and public use areas are accessible. | _____ | _____ | _____ |
| - Provided accessible units, sleeping rooms, and suites. | _____ | _____ | _____ |
| - Provided sleeping accommodations for persons with hearing impairments. | _____ | _____ | _____ |
| - Provided a dispersed class and a range of room options. | _____ | _____ | _____ |
| - Provided accessible rooms in ADAL projects. | _____ | _____ | _____ |
| - Provided an accessible route to accessible sleeping rooms. | _____ | _____ | _____ |
| - Provided accessible clearance widths within sleeping rooms and around beds. | _____ | _____ | _____ |
| - Provided accessible doors within accessible sleeping rooms. | _____ | _____ | _____ |
| - Provided accessible fixed or built-in furniture and storage units. | _____ | _____ | _____ |
| - Provided accessible controls throughout accessible units. | _____ | _____ | _____ |
| - Where provided as part of an accessible unit each of the following were provided as accessible: living area, dining area, at least one sleeping area, patio/terrace/balcony, toilet/bath, and carport/garage/parking. | _____ | _____ | _____ |
| - Where provided as apart of an accessible unit, the kitchen, kitchenettes, wet bars, or similar amenities were also provided with accessible features. | _____ | _____ | _____ |
| - Provided visual alarms, notification devices, and accessible telephones. | _____ | _____ | _____ |
| - Provided accessible doors and doorways designed to allow passage into and within all sleeping units or other covered units. | _____ | _____ | _____ |

20. Transportation Facilities:

(This section covers Air, Rail, and Bus public transportation facilities. See Section 10 of the ADA Guide for specific requirements for these facilities)

ADA ARCHITECTURAL DESIGN CHECKLIST

ATTACHMENT 3

AIR COMBAT COMMAND CIVIL ENGINEER

ARCHITECTURAL AND INTERIOR DESIGN STANDARDS



January 2002

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COMMAND STANDARDS

The Air Combat Command Architectural and Interior Design Standards provide guidance for all facilities on ACC installations, tenants on ACC bases, and ACC units on other major command (Majcom) installations except interior finishes in tenant facilities. It covers all project types including Military Construction (MILCON), Operations and Maintenance (O&M), Non-Appropriated Fund (NAF), P-341, and any base or tenant support by in-house, Self-Help, or Rapid Engineer Deployable Heavy Operational Repair Squadron Engineer (RED HORSE) resources. ACC bases must follow the ACC policy standards in local base architectural standards.

The ACC Architectural and Interior Design Standards must be followed in all these circumstances unless a waiver is obtained from ACC/CV. All waiver requests must be a signed letter by the Wing Commander of the requesting ACC base or the unit commander for units not on ACC bases. Submit the waiver request to ACC/CE, 129 Andrews Street, Suite 102, Langley AFB VA 23665. Submit the waiver request early in the design process, at least by the thirty-five percent design stage. Allow a minimum of 12 working days from the date of receipt for processing.

All AF 1391C forms submitted to ACC/CEP shall contain a section that identifies whether or not the project complies with the ACC Architectural and Interior Design Standards and the Base Architectural Standards. For more information contact ACC/CECT.

REGULATORY GUIDELINES

The ACC Architectural and Interior Design Standards are not intended to provide comprehensive technical information generally known to professional architects, planners, engineers and interior designers. This guide does not provide all the information needed to design and execute a successful project, but should be used in conjunction with other documents and project specific criteria. All ACC projects must comply with regulatory guidelines such as the local building code, the National Electric Code, the Air Force Policy Directive for Installations and Facilities (AFPD 32-10), the Air Force Joint Manual for Installation Design (AFJMAN 32-1008), the Air Force Instruction for Design and Construction Standards and Execution of Facility Construction Projects (AFI 32-1023), the Air Force Instruction for Planning and Programming of Facility Construction Projects (AFI 32-1021), the Air Force Instruction for Planning and Programming Nonappropriated Fund Facility Construction Projects (AFI 32-1022), the Air Force Instruction for Planning and Programming Appropriated Funded Maintenance, Repair, and Construction Projects (AFI 32-1032), the Air Force Instruction for Standard Facility Requirements (AFI 32-1024), Air Force Pamphlet for Sign Standards (AFPAM 32-1097), the Air Force Instruction for Air Force Comprehensive Planning (AFI 32-7062), the Interim Department of Defense Antiterrorism/Force Protection Construction Standards, the Air Force Installation Force Protection Guide, the Air Combat Command Instruction Exterior Signs (ACCI 32-1054), the Uniform Federal Accessibility Standards, the Americans with Disabilities Act, the Military Handbook 1008C, NFPA 101, NFPA 1141 and the Uniform Building Code. This list is not

meant to be all-inclusive. Architects, planners, engineers and designers should check with their Design Agent or government project manager for the latest guidelines.

ARCHITECTURAL DESIGN POLICY

The special character of defense installations dictates “compatibility” over “personal style” or “architectural statements”. The limited size and function of ACC bases cannot accept the diverse opinions of the many design professionals without becoming cluttered and unsettled. In this context, “good design” is defined as design that contributes to the overall harmony of the base rather than design that attracts individual attention. Good examples of where ACC goals should lead are college campuses and corporate office parks. Because we do not want monotony, every building does not have to be the same, but some common architectural element or theme should tie all buildings together to create architectural compatibility. Buildings that hold special importance on the base such as wing headquarters and chapels should stand out as object buildings. Other buildings should function as background buildings. All buildings should be aesthetically attractive, convenient and logically laid out, technically sound, compatible with their environment and built with long-lasting materials and details that reduce life cycle costs. Responsible design will achieve this goal.

The Architectural Policy has a set of goals that guide the development of the policy.

- Site Conditions. Provide site improvements and building forms appropriate to any new, future or existing buildings. Facilities having similar or related functions should be located in the same vicinity. Do not let parking dominate. Encourage pedestrian access. Relate building forms to each other. Create small clusters of related buildings as opposed to spreading buildings out across the landscape.

- Environmental. Design facilities in ways to enhance environmental quality and minimize consumption of natural resources. Tightly cluster buildings that are related to each other creating walkable campuses. These clusters will reduce the amount of land use, utility costs to run utilities to large expanses of land, and vehicle costs to move from building to building. Consider participation in the Leadership in Energy and Environmental Design program.

- Layouts. Provide functional layouts that are logical and satisfy users’ needs both inside and outside of the facility as well as layouts that have the ability to accommodate other future users. Anticipate and plan for expansion.

- Low Maintenance. Use permanent low-maintenance exteriors that are compatible with ACC base standards and their natural and manmade environments. Use materials that do not require painting during their lifetime. Emphasize low life-cycle costs. Use indigenous landscaping that requires little or no irrigation and little or no maintenance.

- Aesthetics. Design buildings that are aesthetically attractive using materials that are indigenous to the local area or the function of the base. Follow the Base Architectural Standards. Keep in mind that all buildings do not have to be “object” buildings. Buildings such as chapels, dining halls, public buildings, etc. should stand out as object buildings, whereas other buildings should blend into the background emphasizing the object buildings. Facilities should foster a sense of pride among its occupants.

- Technology. Provide technically sound buildings at low costs. Take advantage of emerging technologies, but not at the expense of aesthetics or standards!

- Cost. Reduce life-cycle costs. Concentrate on low life-cycle costs as opposed to low initial costs. Our facilities should be designed, constructed and maintained to last decades. Reduce labor-intensive maintenance procedures.

- Approval. Obtain user approval of design concept layout prior to predesign conferences in order to prevent costly changes during final design, contracting and construction. This is normally done through a Customer Concept Document prior to preparation of programming documents.

SITE DESIGN

The land in-between and around our buildings provides the fabric which holds our bases together. As such, these areas need to be as well thought out as our buildings. Well-designed outdoor spaces help create friendly, inviting, walkable communities. Site selection and design are important to achieve compatibility with the Base General Plan. The following guidelines for site location, site issues, pavements, landscaping, site amenities, site signage and infrastructure will help contribute to this compatibility. Include all applicable standards including force protection/anti-terrorism.

Location:

Situate new buildings within compatible functional groups as determined by the base master plan.

- Complexes. Locate buildings supporting common functions such as civil engineering, administrative, or flying functions in complexes in order to share a common infrastructure of roads, parking, utilities and security. These tight clusters should read as one idea with similar details and materials that link them aesthetically as well as functionally. Provide enough space around a complex for expansion. Assume ten expansion whenever other supporting data is not available.

- Environmental. Design facilities in ways to enhance environmental quality and minimize consumption of natural resources. Clustered buildings reduce the amount of land use, utility costs to run utilities to large expanses of land, and vehicle costs to move from building to building.

- Traffic. When existing traffic patterns are changed by new construction proposals, provide adequate traffic alternatives to coincide with the construction of the new project. Locate buildings so that you can walk between buildings in a functional group. Only encourage driving when walking cannot be accommodated. Design parking lots so traffic can move between adjacent parking lots. Avoid the commercial strip parking lot system where lots are designed so vehicles cannot move between lots.

- Noise. Consider noise levels and attenuation requirements when locating facilities. Do not locate facilities in incompatible noise zones unless no other options are available.

Site:

Once the site has been selected, address every aspect of site planning early in the process, including building siting, relationship of interior spaces to the site, pavement, landscaping, pedestrian access, signage, service equipment, infrastructure, and other barriers. Design facilities considering both the inside functional requirements of the buildings and the influence of the site. Design the entire site. Include all applicable standards including force protection/anti-terrorism.

- Site influence. Do not use sites that force building functions into basements, third floors, or uneconomical shapes such as curves, diagonals, or long rectangles.

- Open area. Use sites that permit open landscape space around buildings to separate the building from required pavement. Prevent an overcrowded appearance. Do not allow pavements to come directly up to facilities except for especially selected, purely industrial uses.

- Existing site contours. After positive drainage away from buildings is developed, use existing or natural grades and contours to avoid excessive cut and fill operations.

- Setbacks. Sites need to allow minimum setbacks from other structures such as buildings, roads, and parking. Minimum setbacks are 25' for the front and rear, and 30' for the side. Keep setbacks consistent with buildings and other structures in the area.

- Environmental. Site buildings in accordance with appropriate laws and directives regarding wetlands, flood plains, protected species habitats, and archeological sites.

- Screening. Screen utility equipment, dumpsters, and storage areas. Use walls and mature landscaping or berms. Do not use chain-link fence. Exterior recycling bins should be treated and screened as trash dumpsters.

Pavements:

Pavements include streets, parking lots, sidewalks, and airfield pavement.

- Parking. Use size, location, and screening to prevent parking from becoming a dominant feature. Use consistent angles and stall sizes in all parking areas. Use drop-off areas at high-use facilities to decrease close-in parking. Use raised parking islands to break up parking areas except in areas with excess snow. (Contact ACC/CEC for a list of excess snow areas). Curb all parking lots and avoid using wheel stops/bumper blocks.

- Buildings and Parking Lots. Do not locate parking directly in front of buildings or entrances. Do not locate parking between the main viewing street and buildings. Locate parking behind buildings. When a building is located between a street and a parking lot the building appearance

is improved and the parking is screened with minimum cost. Consider building shape and relationship to other buildings to provide as much screening as possible. Ensure the principle or main view of the building presents a pleasing and uncluttered appearance. The parking arrangement is a major factor in providing an orderly appearance.

- Parking Lot Size. Use separate smaller parking lots of 50 cars or less rather than one large lot. Where large parking lots exist, landscape approximately ten percent of the area within the lot except in excess snow areas. (Contact ACC/CEC for a list of excess snow areas)..

- Walking distance. Design parking lots to limit walking distance. Use a maximum of 200 feet for most buildings; for transient and unaccompanied housing limit luggage carrying and walking distance to 100 feet.

- Paving. Use economical asphalt paving for most vehicle parking areas, but avoid asphalt sidewalks and curbs. As a minimum, use concrete for sidewalks and curbs. Consider special unit pavers for courtyards, plazas, entrances and other high-profile sites. Provide a landscape buffer between all buildings and paved areas.

- Streets. Avoid utility or other cuts in pavement. Whenever possible use tunneling technologies to go under pavement with conduits or piping. Streets should intersect at right angles and offset intersections should be avoided.

- Curbing. Curb all parking, access roads and streets (except remote/isolated). All primary streets and all parking lots should be paved with integral concrete curbs and gutters. Painted curbs are prohibited because they are very difficult to maintain. Provide mower ramps for access to grass areas.

- Walkways. Use concrete walkways at least 48 inches wide to link facilities and promote pedestrian use. Illuminate walkways used heavily at night. Provide walkways on at least one side of every street and between all facilities. Avoid placing utility poles or signs too close to sidewalks. Locate walkways judiciously and in accordance with the Manual on Uniform Traffic Control Devices. Contact ACC/CEO for further guidance.

- Handicapped Access. Ensure handicapped access is provided at intersections, crosswalks and wherever UFAS and ADA require them to be.

- Drainage. Design paved areas to minimize drainage. Drain into natural water courses, detention, and retention ponds.

Landscape:

The use of appropriate trees and other landscape plantings provides a positive first impression, promotes energy efficiency, inhibits erosion, reduces noises, and enhances safety by helping to control blowing/drifting snow. Landscape planting also supports national policy aimed at enhancing air quality. All landscape plantings should comply with the base land management plan. Develop functional rather than purely visual landscapes. Plan to reduce maintenance.

Provide a landscaped space uncluttered by vehicles in front, at the entrance, and between the main viewing street and buildings.

- *Plant material.* Consult the Base Architectural Standards for an appropriate landscaping material list. Use indigenous, low maintenance, adapted trees and shrubs locally recommended for urban or street use that can survive without irrigation after the first season (one year) warranty maintenance period. Do not use plant material that drops large amounts of fruit or seedpods. Select deciduous trees that drop all their leaves early in the fall season rather than those that retain brown leaves most of the winter and continue to be a maintenance problem for many months. Some trees to avoid are Sycamore, Beech, and some Oaks. Place mulch bed around all trees and shrubs. Consider fabric barriers that contain an effective pre-emergent herbicide that will provide protection for many years.

- *Sustainable Landscaping.* Landscaping practices should incorporate sound design planning while minimizing the requirement for fertilizers and pesticides. Use water efficient practices such as mulches, efficient irrigation systems (drip irrigation), and reclaimed water. Consider using boulders with plants, gravel blankets for grass, and pebbles for ground cover. Soften arid landscaping with varied contours and drought-tolerant plantings.

- *Preservation.* Preserve existing landscape where possible. Use consolidated development areas to help preserve the existing landscape. Avoid overplanting and allow for natural growth and form of plants. Limit turf and keep it free of obstructions which require trimming. Define planting areas with walkways, edging and concrete curbs.

- *Mowing strips.* Provide planting beds with wide mowing strips. Mowing strips should eliminate hand trimming and edging caused by turf creeping into bedding plants.

- *Surface Runoff.* Use trees, shrubs, grass and landscaping to reduce storm water runoff. Terrace steep slopes.

- *Berms.* Use berms to screen and restrict views. Limit berm slope to one foot in 10 feet. Do not use earth berms against building walls.

- *Function.* Use landscape to reduce energy cost, shade to prevent heat and glare, and windbreaks to lessen air infiltration. Use landscape to screen unsightly views, control pedestrian circulation, define entries, and accenuate outdoor amenities.

Site Components:

Site components include site furniture, bicycle racks, trash receptacles, etc. Site components and the spaces in between buildings should be as carefully planned as the spaces within buildings. These spaces provide a cost effective way to provide pleasurable spaces. Encourage attention to detail concerning each of these site components. Work to reduce visual clutter, unnecessary signs, receptacles, etc. Include all applicable standards including force protection/anti-terrorism.

- *Site Furniture.* Site furniture is defined as furniture or other accessories provided in outdoor areas for the comfort or convenience of personnel. Examples are benches, litter receptacles, ash

cans, picnic tables, and bicycle racks. The design of site furnishings should respond to the local climate and cultural influences. Bases have established an overall plan that complements the installation architecture and environment. Use these for site furniture selection.

- Color. Use site furnishings to complement exterior color schemes. Limit colorful accents to high-profile sites. Ban the use of red ash cans and yellow pipe bollards.
- Materials. Use durable materials which are appropriate for the architectural context and the environment, such as factory finished metals, precast concrete, or quality wood. In hot climates, be careful of metal finishes that may burn anyone who might touch the object.
- Outdoor Seating. Provide comfortable benches or seat walls near building entrances and in courtyards. Tables should be limited to informal gathering places such as picnic or dining areas.
- Receptacles. Place litter receptacles and planters on paved sites where they are clear of circulation. All litter receptacles require attached lids. Ash receptacles must match outdoor furniture.
- Bollards. Bollards shall be set into paving or placed in sleeves to allow access. Use bollards to enhance pedestrian protection and provide vehicle control.
- Bicycle Racks. Bicycle racks should be located near entrances in secure, visible areas. Racks must be on concrete, brick or block pads. Use simple, attractive racks.
- Flag Poles. Locate flag poles in accordance with AFR 900-3. Morale flagpoles are not allowed in accordance with AFI 84-105.
- Other Assorted Items. Consider accessories such as newspaper vending machines, smoking receptacles, planters, refuse containers, and other equipment in design plans. Neutralize the visual impact of these items by developing a basewide standard, as well as painting, concealment, or removal. Locate these items in convenient yet discrete locations.

Site Signage:

Site signage must provide clear, consistent, and necessary direction or information. Correctly designed and controlled signs can be a positive aspect of the installation's overall professional image. Follow ACCI 32-1054, Sign Standards Pamphlet. The following are excerpts from ACCI 32-1054 and are not all inclusive. National Highway Traffic Safety Administration signs must be used for all regulatory and warning traffic signs.

- Visual Clutter. Reduce visual clutter by eliminating super-graphics, poorly designed signs and outdated information. Taping temporary signs on doors, walls, or windows is prohibited. Condense and consolidate information to minimize the number of signs. Standardize the height of all signs by type. Use sign systems that will accommodate changes.

- *Color*. All exterior signs will be consistent throughout each installation. Langley brown (Federal spec 21000) background is the ACC standard. Poles and back of signs should be painted or factory finished to match.

- *Street Signs*. Include the Command shield on all street signs. Color and lettering should be consistent with other signs on the installation. Ensure there is a street name sign for each street at intersections.

- *Directional Signs*. Install directional signs only where needed to guide visitors and new base personnel. Normally, only four entries should be displayed on a sign.

- *Special Signs*. Limit unique signing to high-visibility locations where highlights are required to support the architectural theme. Avoid plastic letters and marquee and warning signs on the outside of utility or equipment room doors unless required by code.

- *Parking Signs*. Reduce the number of parking signs by strictly limiting reserved parking, including temporary reserved parking. Standardize reserved parking designations by installation.

- *Temporary Sign Standards*. Develop a simple base standard for temporary signs such as a painted brown 4"x4" column with a wood base and a brown sign with white lettering .

Infrastructure:

Components of the installation infrastructure such as street and area lighting and fuel and water storage tanks must be considered when developing facilities. Emphasis should be placed on reducing visual impact by proper siting, painting, screening, or concealment. Utilities should be underground whenever possible. Allow sufficient capacity for future growth. Ensure all applicable standards are followed including force protection/anti terrorism.

- *Color*. New equipment should have a factory-applied color appropriate to the installation standards. Paint existing equipment to match. Avoid galvanized or green finishes.

- *Screening*. Use walls and landscaping to screen all utility equipment but maintain required access and clear zones. Avoid the use of metal or wood fencing. Do not use chain-link fencing except for perimeter fencing or high security locations. See the Base Architectural Standards for screening materials appropriate at each base.

- *Special Purpose Lights*. Use lighted bollards along high-use walkways, inset stair and wall lights for plazas and high-use walkways.

- *Street and Parking Lights*. Rectangular shaped luminaries are preferred for high-profile locations and dark colored cobra heads for outlying sites. Comply with the Base Architectural Standards. Use consistent lamp types. Metal halides lamps are preferred for most areas, but sodium lamps may be used where necessary. Avoid bright finishes and trendy mountings. Avoid use of low-pressure sodium lamps.

- Fuel and Water Storage Tanks. ACC prefers well-screened, appropriately site above ground tanks. Ideally this means that each tank is located out of view from any major road, main building entrance or significant outdoor space and well screened with a screen wall that matches its parent facility or if there is no parent facility follow the Base Architectural Standards. If this is not possible then use a vaulted tank and size the manholes adequately for maintenance and inspection or use a UST compliant with ACC MAN 32-7051. All UST locations and screening must be approved by ACC/CEC. Submit supporting documents (plans, site plan, elevations, tank details) to ACC/CEC. On above ground storage tanks avoid multiple colors, super-graphics, logos, and glossy finishes. Colors should be consistent with the installation Base Architectural Standards. Elevated storage tanks may be used to display the AF shield only on the base standard tan or beige background, appropriately sized and proportioned. Send in a site plan for each tank for ACC/CEC approval during the planning phase of the project.

- Security. Use quartz lights in secure areas and controlled access points where an instant-on feature is required. Do not use lighting to enhance architectural features.

- Fire Protection. All facilities must be designed and constructed in accordance with Mil Handbook 1008B and other ETLS available through ACC/CEC.

- Sewer. When siting multiple facilities, gravity flow sewers are desired instead of individual pumping stations at each facility.

- Efficient Use of Utilities. New facilities must be designed and constructed to minimize life cycle costs or exceed energy performance standards. Active and passive solar will be considered in new designs. Water conservation initiatives are encouraged. Many varieties of fluorescent and high-intensity discharge lighting produce quality lighting.

FACILITY DESIGN

Our buildings and the areas around them provide not only our places of work and relaxation but also reflect our sense of pride in ourselves. As such, each building and its site should be aesthetically attractive, convenient for its users, technically sound, compatible with its environment, and built with long-lasting materials and details. Refer to the installation Base Architectural Standards for exterior base standards. Base standards establish an architectural theme in keeping with the existing historical styles, local climate, and construction standards. Provide economical construction without compromising a high quality, architecturally pleasing, and professional military appearance. Ensure all standards are followed including force protection/anti-terrorism.

Exterior treatment requires careful management to achieve the desired overall compatibility. Each base has to define a context and direction based on existing built and natural environment. Ensure that the exterior details respond to the building's use, location and importance on base. Use of the following guidelines will achieve the desired ACC standard.

Form:

Use simple plans and building forms as well as conventional sloping roofs. Eave heights may vary as required by interior functional relationships, but do not use more than one pitch angle on a building. Do not combine two kinds of roof such as flat and sloping roofs on the same building unless it is clearly justified by the influence of adjacent architecture, building function or layout. Minimize corners, offsets and curves on horizontal and vertical surfaces. Use only as clearly justified by the adjacent architecture, building function, or layout.

- *New versus old.* Imitate and improve on existing base building forms to provide harmony between new and old. When new sloping roofed buildings are sited among existing flat profiled buildings, steps must be taken to develop some secondary flat forms to relate the new to the old.

- *Height.* Except for dormitories, which are limited to three stories, limit buildings to two stories above ground. Do not use basements for occupied spaces.

- *Main Entrance.* Main entrances should face a major street. Emphasize the main entrance of all facilities using a combination of architectural treatments and building signage.

- *Mechanical.* Do not let mechanical systems become form-givers. Locate mechanical units to the rear or side of buildings. Design these features to blend in and to integrate with the building architecture in such a way that they are not prominent or detectable. Match materials for mechanical enclosures to the building they serve; i.e., masonry with masonry. Do not use roof-mounted equipment. If no other alternative is available waiver requests for rooftop mechanical equipment should be submitted to ACC/CEC. If required, match the equipment enclosure to the roof or wall material, as much as possible. Equipment wells are also acceptable. As a minimum, screen any equipment at ground level with landscape. In arid climates architectural screens are required. When screening mechanical equipment, ensure adequate clearance, as recommended by the equipment manufacturer, is provided to allow for proper air circulation and maintenance.

Walls:

Minimize use of curves, cants or angles other than 90-degree corners. Use only as clearly justified by the adjacent architecture, building function or layout.

- *Material.* On exterior walls use low maintenance durable materials that are integrally colored and textured such as brick, split-face Concrete Masonry Units (CMU), split ribbed CMU, prominently exposed aggregate on precast concrete or other substrates, and integrally colored concrete that is textured by use of form liners. Brushed, honed or sandblasted concrete is not acceptable. Do not use materials that require painting on new buildings. Avoid the use of materials that require painting on renovation projects. Use of bricks, blocks, or grout containing fly ash or other byproducts is encouraged. Use concrete containing fly ash or other recycled materials. Autoclaved cellular cement should be used where appropriate. On interior walls the use of exposed or painted CMU is not allowed except in gymnasiums or industrial uses. Decorative split-face CMU, ribbed CMU, or similarly integrally colored, textured masonry materials may be used as interior finishes in building entries with a waiver from ACC/CEC.

- *Metal*. Metal walls are only acceptable for extremely large buildings such as aircraft hangars and temporary buildings. See the metal building section of this document. Exposed metal stairs are not acceptable in any renovation or new facility.

- *Painting*. Do not paint new buildings and do not use materials that are typically restored by painting such as stucco, exterior insulation finish systems, metal fascia, and various kinds of siding on renovations. Secondary doors may be painted as described in the next paragraph. On metal buildings, select a factory prefinished material. See the Base Architectural Standards for this selection.

- *Anodized Aluminum*. Color anodized aluminum in neutral colors (suggest dark to light bronze) is recommended for exterior metals normally associated with walls such as fascia, gutters, downspouts, windows, and building entrances. Fire exit doors and other secondary doors and frames may be painted for economy. When painting secondary doors and fire exits, they should be painted to match the primary color anodized entrances or painted to match adjacent walls; this is a designer option. The objective is to produce a simple appearance which is uncluttered by many colored shapes.

Doors and Windows:

Aluminum anodized, factory finished door and window frames are preferred for most locations. Avoid use of mirrored glazing. Operable windows and tinted, energy-efficient glazing are encouraged. Where appropriate, install window screens to take advantage of natural ventilation. Provide window screens where windows are operable and designed for ventilation. Windows, which operate primarily to allow cleaning, do not need screens. Provide screens for Military Family Housing (MFH) and Unaccompanied Enlisted Personnel Housing (UEPH).

Roofs:

Flat roofs and interior gutters are prohibited. Use sloped roofs equal to or greater than 3:12. Use proven, cost-effective roof systems with high durability and weather resistance such as factory-finished standing-seam metal or shingle roof. Ensure colors are compatible with ACC and base standards. These low-maintenance alternatives are required because of the poor maintenance history of low slope (less than 3:12) single and multi-ply roofs and systems as well as built-up roofs. Generally use a hip or gabled roof. Do not combine roofing materials such as metal and shingles on one roof. Make all of the building parts compatible with each other. Overhangs for weather protection and shade are desirable. Do not locate mechanical equipment on the roof. Where unavoidable, make sure rooftop units are screened. Roof-top mechanical units require a waiver from ACC/CEC. Roofing made from recycled materials is encouraged.

- *Alternatives*. Do not use low slope roofing if 3:12 or steeper pitch if feasible. Building form and size (extremely large buildings such as supply facilities, main base exchanges, or commissaries) may occasionally require lower slopes and other materials. Roof designs lower than 3:12 require a waiver from ACC/CEC except commissaries and main base exchanges. If designing a low slope roof, slopes as low as 1:12 are generally accepted for structural standing seam metal (consult with manufacturers for particulars). When a single or multi-ply roof is used,

slope the roof at 1/4:12 minimum. The slope is to be accomplished with structural members for new built up roofs, not by tapering the insulation.

- Drainage. Provide continuous roof slope to the perimeter of the building. Do not design interior valleys or depressions that will form ponds if a roof drain becomes obstructed. Ensure overflow scuppers are provided in accordance with applicable codes for parapets. If interior drainage can not be avoided, submit to ACC/CEC for approval.

- Skylights and clerestories. These features may be used where strong functional and economic justification dictates. Fully document economic justification and submit with proposed design to include life-cycle cost of special ballast and control devices to ACC/CEC for approval. Be sure to consider heat load and occupant comfort as part of the proposed design. General area lighting for warehouses is not considered strong enough functional justification to compensate for the generally high maintenance associated with large numbers of skylights on a low slope roof.

- Metal fascia. Do not use wide metal fascias with low slope roofed buildings. If a band is desired around the top of a building, provide it with masonry detailing such as projections, soldier course, or stack bond. Masonry detailing provides a more durable maintenance free fascia that does not require painting.

Additions:

When building additions are proposed, careful coordination is required to determine if the addition should match the old building or if the old building should be changed and brought up to ACC standards at the same time as the addition.

- Small addition. When additions are less than 25% of the existing building's floor area, design additions to match the original construction.

- Large additions. When additions exceed 25% of the original building area, the addition and the original construction are required to comply with ACC standards. For example, a flat-roofed building of 10,000 square feet needs an addition of 3,000 square feet. In this example 3,000 is more than 25%. The additions would have a sloped roof, and the original building would be designed to have a sloped roof. If the original building were plain CMU, then a new exterior wall finish of textured CMU would be considered either in the form of a complete veneer or as a minimum, use textured CMU at important visual points such as entrances, planters, sign, corner protection, etc.

- Compatibility. In either case (large or small), when additions are complete, they should be architecturally compatible rather than obvious add-ons.

- Fire Sprinklers. Designers of additions need to evaluate the need for sprinkler protection for both the new and existing structure.

Metal Buildings:

Metal buildings may be used for only large structures such as hangars or temporary facilities. When large buildings are metal a masonry base proportionate to the height of the building is required. The base must be an integrally colored, textured masonry base for durability. Temporary buildings must be removed within one year. All temporary buildings and large buildings except hangars require a waiver from ACC/CEC. Specialized facilities such as water towers and fuel tanks may be metal.

- Location. Use metal buildings where they are compatible with adjacent structures. Do not use temporary metal buildings in highly visible locations. Temporary metal buildings used anywhere should be well screened with walls or vegetation.

- Finish. Use factory applied finishes with more than 15-year warranties.

- Submit site justification. At the programming stage, submit siting criteria and waiver request to ACC/CEC. Indicate adjacent building construction. If the building is isolated, describe how visible it is from major, minor, or service roads. State reason for selection of metal over masonry in addition to cost consideration.

- Protective masonry. Provide protection on the exterior of buildings where impact to metal panels is probable. For example, integrally colored and textured masonry should be used at entrances, at corners, exterior wainscot to four feet high where vehicles are parked next to buildings, around forklift operations, and at loading docks.

Colors:

Each installation is required to have an exterior color standard. The Command standard is to use neutral colors such as bronze, tan or beige or colors that occur naturally in traditional building materials as the field colors with complementary trim colors which are compatible with regional color motifs. Use neutral anodized colors such as brown tone or gray tone neutral. Judgement has to be exercised in selection of colors for isolated miscellaneous features such as exit doors, downspouts, etc. In some cases, a building benefits from having isolated features colored to match adjacent light-colored walls. This is very important on older buildings with many windows and doors. Coloring trim a contrasting color can produce a cluttered appearance.

- Wall materials. Select neutral colors such as beiges and browns, as large wall surfaces should not attract attention.

- Exterior metals. Use neutral anodized colors such as bronze. When aluminum, hollow metal, and wood are mixed on one building, hollow metal and wood may be painted to match the aluminum color or adjacent walls. In any case, do not use a third color that does not match the bronze metals. Use one trim color to the greatest extent possible.

- New work. Do not paint new masonry; instead use integrally colored, textured masonry materials.

- Color use. Usually two colors on a building produce the best appearance - one wall color and one trim color. Do not use more than three colors - one wall color and two trim or accent colors such as exposed aggregate fascia, columns, beams, etc.

Utility and Dumpster Enclosures:

Provide an enclosed yard to conceal miscellaneous support items such as generators, transformers, trash, lawn equipment, flammable storage, HVAC, meters, and aboveground tanks.

- Enclosures. Match enclosing walls to the building wall material. Split faced CMU is a good durable material. When this is not possible, metal slats and planting may be used. In some cases, plant material by itself may be used to conceal the service area, but it must functionally conceal the service area at the time of planting. All enclosures need to be at least six feet tall. If the items being concealed are taller than six feet then the enclosure should be as tall as the tallest item in the enclosures plus six inches. The use of open panel block is permitted when enclosing electrical substations, transformers, or switches for proper heat dissipation.

- Gates. If possible locate trash and mechanical enclosures so the access to the enclosure is not visible from major streets or major building entries. If this is not possible, provide gates for trash enclosures. Also provide gates for enclosures where accessibility needs to be limited.

- Subdivide. Organize and layout the service yards by responsibility. For instance, HVAC equipment should not be in the trash enclosure. Many of the functions may require separation and separate access such as tools, lawn mowers, fuel, etc.

- Pavement. Provide vehicular access and surfacing such as pavement, grass pavers, or gravel to reduce maintenance. Use concrete curbs or edging.

- Service Areas. Integrate service areas with the building design and match adjacent materials.

K-SPAN:

K-SPAN use and application are more suited to forward operating locations of CENTCOM and SOUTHCOM, or during contingency operations. In all cases, K-SPAN facilities to be located on ACC bases require HQ ACC/CE siting approval prior to purchase, delivery, or start of work. Treat inflatable buildings the same.

- Use. Limit K-SPAN to storage applications outside the main area of ACC bases such as weapon storage areas, if approved by ACC/CV.

- Structural. Provide additional reinforcing and structural analysis when either design wind load or design live load exceeds allowable values for a K-SPAN structure of given width and height. Consider K-SPAN structures with a factory finished metal.

- Site Justification. Submit site justification with programming documents. Provide enough information about the intended site to satisfy HQ ACC/CE that the K-SPAN buildings will be

compatible with their surroundings. Indicate what is in the site vicinity and if the buildings are visible from roads or populated areas.

Solar Application:

Integrate solar components with roof or wall forms. Give preference to passive solar applications over active solar applications. Do not let solar components clutter or break the normal building form line. Example: vertical collectors should look like glass walls and roof collectors should match the roof slope. Exceptions: when collectors do not look like walls or match roof slopes, screen them from view with materials that coordinate with the building material.

Facility Signs:

Provide signs that comply with base architectural compatibility and ACCI 32-1054, Exterior Signs. No organizational emblems, logos, or direct-paint applications are permitted. Identification of key personnel such as commanders is also not permitted. Standardize building address sign size and placement on each installation. One unit identification sign is permitted for each facility.

- Moving Signs. Do not use moving or revolving signs on ACC bases.

- Monument. Use of monument signs is limited to headquarters buildings (MAJCOM, NAF, wing and group commanders). See ACCI 32-1054 for guidance.

- Lettering Size. For signs other than those covered by ACCI 32-1054, size lettering according to the functional viewing distance. Keep sign size to a minimum. The rule to follow for readability is one inch of letter height for each 25 feet of view distance. Example: If a sign is intended to be read from a passing car using a road 100 feet away, the largest sign lettering would be four inches (100 divided by 25 equal 4). Do not oversize.

- AAFES/DeCA/Commercial Signs. Logo and lettering supplied by AAFES/DeCA/or the parent organization are required to be the AF and ACC standard. Contact ACC/CECT for a copy of the standard sign.

- Lighted Signs. Internally lighted signs create a commercial impression that is not compatible with AF and ACC standards. When night visibility is functionally required, use external flood or spot lights that illuminate both the sign and adjacent landscape or building. Illumination of the sign with its surroundings makes a better impression and improves orientation.

- Lettering. All lettering on all base signs should be of the same style, upper and lower case Helvetica medium type style.

Exterior Graphics, Striping and Banding:

- Super Graphics. Painted stripes, letters, and supergraphics are prohibited and not compatible with current AF and ACC standards.

Force Protection/Anti-Terrorism:

Coordinate and integrate force protection/anti-terrorism elements such as walls, blast protection and fences with base and building architecture as well as good architectural practices. For instance, during site planning cluster buildings that are functionally compatible with strong boundaries and move parking away from the cluster. Use distance in a positive way. During facility site design, use landscaping, bollards, planters, and other site amenities as barriers. Provide adequate lighting. Place utilities underground. In facility design, elevate the first floor, construct blast protection by surfacing it with the same materials as the building that it is protecting, and minimize signage. Good force protection/anti-terrorism planning and design is compatible with good planning and architectural practices.

INTERIOR DESIGN POLICY

Design standards have been developed by the professional design staff at Air Combat Command Civil Engineering (ACC/CECT) to provide for the best possible coordination of interior finishes and furnishings for long-lasting maintainable interiors.

These standards are developed around an understanding of the elements and principles of design and how the industry operates, not around personal likes and dislikes.

Each year the Color Association of the United States (CAUS) develops a color palette for the succeeding year. This palette changes gradually each year and is the guide by which manufacturers determine the colorways in which they will produce their products. Whether it be fashion or automobiles, refrigerators or ceramic tile, these color palettes influence manufacturers. The images of the pink and black tile bathrooms of the 50's, the avocado green or harvest gold kitchen appliances and laminate countertops of the late 60's and early 70's, and the mauve and teal color schemes of the 80's is why it is a mistake to use faddish colors in permanent finishes. All in-vogue or trendy colors become dated once wallcovering, carpet or other manufacturers change their color palette.

The Air Combat Command standards ensure materials purchased and installed in our facilities will perform well in respect to both aesthetics and durability.

Command Standards:

Air Combat Command standards vary based on whether a finish is permanent or non-permanent. The differentiation is necessary due to annual CAUS color palette changes. Generally permanent finishes last longer and consequently need to be a color that will not become dated after a few years. Non-permanent finishes do not last as long and can be updated as palettes change.

Permanent Finishes:

Permanent finishes are generally the hard surface structural interior design (SID) finishes that will last 15 to 20 years and whose removal and re-installation can be costly and may cause a major disruption to the facility. Such items as vinyl composition tile (VCT), ceramic, and other hard surface tiles, plastic laminates, toilet partitions, lockers, window blinds, all modular or systems furniture panels, work surfaces, flipper doors, etc., are considered permanent finishes.

Command standards require that all permanent finishes be in either brown-tone or grey-tone neutrals. These neutral shades can be from very light (such as off-white) to a mid-range neutral

of the same shade (taupe). Neutrals with obvious pink, yellow or blue undertones should be avoided.

Non-permanent Finishes:

Carpet, paint, vinyl wallcovering, upholstery, artwork, etc. are considered non-permanent finishes. Non-permanent finishes will last from five to seven years under most conditions.

Command standards allow non-permanent finishes to be any coloration appropriate to the facility. Most often these finishes will be in mid-range colorations. Very seldom would there be a use for pastel or very bright colors in ACC facilities.

While non-permanent finishes are permitted in various colors, it is highly recommended that in office and other work areas, vinyl wallcovering or painted wall surfaces be kept in a neutral coloration. Light reflective surfaces are important to a productive work environment. Develop a neutral shell for the interior space of work areas, allowing the carpet, upholstery, artwork and accessories to provide the color accents. Since many facilities frequently change occupants or even function, this neutral shell provides a solid base for future flexibility.

Finishes and Treatments:

- Carpet. (See ETL 00-06): Air Force Carpet Standard and the ACC Carpet Guidance. In most facilities a bold tweed or patterned nylon commercial grade loop pile carpet is appropriate. Bold tweed means yarns of several different colors, not various shades of the same color. This allows for several upholstery color combinations within a facility. The majority of yarns must be in mid-range to dark tones to increase the carpet's soil hiding capabilities. In most cases, a dense loop pile is the most hardwearing type of carpet. The face weight should be a minimum of 26 oz/sy. Equally important is the density of a carpet product. Density is a key factor in soiling and resiliency. In an adequately dense pile, dirt will remain on the surface so that it is easily vacuumed away. In addition, more compact fibers are less likely to crush since tufts tend to support each other in the upright position. ACC recommends a minimum density factor of 5,000 for commercial carpets. Refer to ETL 00-06, Table 1 to calculate minimum pile weight to density ratios. Solution-dyed carpets are recommended for medical facilities, Child Development Centers, lodging facilities and Youth Centers. Olefin and polyester (PET) carpet fibers do not meet heavy or severe wear classifications required for the majority of ACC facilities. Polyester carpet is currently manufactured only in cut pile products and its crush resistance is poor. Olefin and polyester carpeting has limited use in light or moderate wear applications possibly including military family housing.

-- Carpet Tile/6' Vinyl Backed. Use of carpet tile is strongly recommended in office areas with systems or modular furniture. Installation techniques are available which allow carpet tile removal and installation without disassembling systems furniture arrangement. Carpet tile or its associated six-foot wide rolled goods should also be used in corridors. Tile or six-foot vinyl-backed products must be installed with manufacturer's recommended releasable adhesive. Extra

tiles or yardage from the same dye lot may be ordered to replace tiles or patch as necessary. Bold tweed patterns or textures help to hide seaming.

-- *Solid Carpet/Border.* Use of solid-colored carpet is approved only for Distinguished Visitors quarters in lodging facilities. Carpet borders may be solid in color. They may be installed with either carpet tile or roll goods. Do not over-do borders within a facility.

- *Hard Surface Flooring.* Hard surface or resilient flooring should be used mainly in heavy abuse areas, wet rooms or walk-off areas to provide superior wearability and cleanability.

-- *Ceramic Tile, Porcelain Tile, Natural Stone and Cast Stone Flooring.* A mottled, flecked or speckled floor tile should be used. Use a medium to dark toned grout which coordinates with the floor tile to hide staining or soiling. Recommend using epoxy grout or grout sealers to maintain appearance. Tile banding accents or patterns are allowed on walls and floors, provided the accent is another neutral shade that coordinates with the dominate tile color. Install with a coordinating base of the same material. Follow manufacturers recommended maintenance instructions. Do not apply wax or other coatings to tile or stone flooring.

-- *VCT, Sheet Vinyl, Laminate Flooring, Stratica®, etc.* A mottled, flecked, speckled, wood or stone pattern should be used. Avoid very light tones. Install with a coordinating vinyl or rubber base. Laminate flooring is not recommended for commercial applications.

- *Vinyl or Rubber Base and Carpet Base.* Vinyl or rubber base color should coordinate with the floor or wall surface. Do not use an accent color for the base. A no-toe profile base should be used with carpet tile installations. A four inch carpet base surged with a coordinating thread or capped with a coordinating neutral vinyl or rubber carpet cap can be used in carpeted areas. If carpet base is to be used in place of a vinyl or rubber cove base, it should be the same product that meets the wall whether field or border carpet.

- *Vinyl Wallcovering.* Type II wallcovering is recommended in most applications for its superior durability and inherent ability to hide wall imperfections. Type I has very limited use in most ACC facilities. A vertical texture or pattern will help hide seaming and a heavy overall texture will hide nail holes or other damage that may occur during the life of the product. Napped material or wall carpet cannot be used as an interior finish.

- *Paint.* Use a low-sheen, latex enamel for all painted surfaces. Flat paint is difficult to maintain. Use a semigloss finish for trim paint.

- *Wainscot and Chair Rail.* Wainscot is not recommended in most areas. Dark paneled wainscot has the effect of visually reducing the size of small office spaces, while in hallways it has a railroading effect. A Type II heavy duty vinyl wallcovering installed floor to ceiling will have a better effect. The purpose of chair rail is to protect wall surfaces from being marred by chair backs. Therefore, the chair back height must be considered to properly locate the chair rail. It may be stained or painted to coordinate with the other woodwork or doors. Wainscot and chair rail should be no more than 36" high in rooms and no more than 42" high in corridors. Heavy

vinyl bumper guards may also be used to protect walls in corridors where needed. These should be in neutral tones to coordinate with the walls.

- *Laminates and Solid Surfacing.* Laminate surfaces are more easily maintained if they have a flecked, speckled, mottled, textured or stone look in a matte finish. Soiling and water spotting is nearly invisible on this type of surface. Solid surfacing material (Corian®, Avonite®, etc.) has an extended life cycle and is easily repaired, but is a costly alternative to plastic laminate and should be considered with caution.

- *Doors and Door Frames.* Depending on the quality of the doors, they may be either stained or painted. If painted, select a color to blend or coordinate with the walls. Paint should be a semigloss finish. It is not recommended to paint doors and jambs in accent colors as this fragments the space. Use artwork, upholsteries, etc. for color.

- *Window Blinds.* Vertical blinds or metal horizontal blinds should be in off-white or light neutrals. Dark blinds that match the anodized finish of the window frames are acceptable, provided the windows are of reflective glass to prevent heat build-up.

- *Ceilings.* In almost all facilities, ceilings (whether painted or ceiling tile), are to be white or off-white. Textured ceiling tiles in two-foot squares with a tegular edge are recommended.

- *Systems/Prewired Workstations/Modular Furniture.* All panel fabrics, work surfaces, flipper doors, etc., are to be in either brown-tone or gray-tone neutrals. Removable tack boards can be purchased in a colored or patterned accent fabric. Only one type of systems furniture should be used per building in order to allow greater flexibility in reconfiguration as occupants' needs change and to provide continuity throughout the space. In open office areas with systems furniture, carpet tile is recommended. Installation techniques are available which allow carpet tile removal and installation without disassembling systems furniture arrangement.

- *Interior Signage.* Interior Signage should coordinate with the facility color scheme. Neutral colors or brushed metals are preferred in most buildings. Select a style with user-friendly changeable inserts to increase flexibility and life span. Text should be a contrasting color from the background. Type style and size should be easily legible. Ensure that all new signage is ADA compliant.

MAINTENANCE AND INSTALLATION

Always install products according to manufacturer's specifications. Use qualified and reputable installers. Warranties will not be valid unless these are done.

Any finish or furnishing product is only as good as the maintenance it receives. A regular maintenance program is crucial to the longevity of any material used in a facility. In most cases, cleaning and maintenance must conform to manufacturer's instructions to validate warranties.

AFFIRMATIVE PROCUREMENT POLICY

The ACC Affirmative Procurement Policy encourages the purchase/use of items containing recycled materials if the price and availability are reasonable, the item meets reasonable performance specifications, and it would not result in inadequate competition. Use of insulation and cement/concrete containing fly ash is required.

Questions concerning any aspect of architectural or interior design may be directed to Air Combat Command Civil Engineer at ACC/CECT, Commercial (757) 764-3108, DSN 574-3108 FAX (757) 764-5339.

ATTACHMENT NO. 4

**ELLSWORTH AFB DESIGN COMPATABILITY
STANDARDS (1998)**

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ATTACHMENT NO. 5

**ELLSWORTH AFB STANDARDS
FOR DESIGN (MAR. 2001)**

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ATTACHMENT NO. 6

AVAILABLE EDITED AND UNEDITED GUIDE SPECIFICATIONS

ABBREVIATIONS

UFGS – UNEDITED UNIFIED FACILITIES GUIDE SPECIFICATIONS
CEGS - OMAHA – UNEDITED OMAHA DISTRICT CORPS OF ENGINEERS GUIDE
SPECIFICATIONS, COPY INCLUDED AT END OF THIS INDEX.
THERE MAY BE SOME PARTIAL EDITING ALREADY DONE.
RFP – EDITED RFP SECTIONS TO BE USED WITHOUT CHANGE

COPIES OF EACH OF THE SPECIFICATIONS SECTIONS (SPECSINTACT FORMAT) LISTED
BELOW HAS BEEN PROVIDED ON THE SOLICITATION CD-ROM UNDER FOLDER LABELED
“GUIDES”. SECTIONS ARE UFGS UNLESS LABELED OTHERWISE.

USE OF UFGS SECTIONS

Unless directed otherwise, use UFGS sections. Available UFGS sections include sections that have a 5 digit section number with either the letters "A" or "N" following the section number or no letter following the section number. The letters designate the specification proponent ("A" is for USACE and "N" is for NAVFAC). The Contractor shall use sections with the letter "A" following the section number or sections with no letter following the section number. Sections with the letter "N" following the section number shall not be used unless there is no other available section, the solicitation directs the use of these sections or the available sections do not meet the solicitation requirements. Where UFGS sections include tailoring options for both Army and Navy, use the Army tailoring option. Where conflicts exist that cannot be resolved, the Contracting Officer shall be contacted to resolve the issue.

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 08331N 08/01 ROLLING SERVICE [AND FIRE] DOORS
 08342 08/02 STEEL SLIDING HANGAR DOORS

AVAILABLE EDITED AND UNEDITED GUIDE SPECIFICATIONS (ON CD-ROM)

08361 08/01 SECTIONAL OVERHEAD DOORS
08370 08/01 VERTICAL LIFT DOORS
08390 04/01 BLAST RESISTANT DOORS
08510 08/01 STEEL WINDOWS
08520A 03/00 ALUMINUM AND ENVIRONMENTAL CONTROL ALUMINUM WINDOWS
08520N 08/01 ALUMINUM WINDOWS
08550 08/01 WOOD WINDOWS
08560 08/01 PLASTIC WINDOWS
08581 08/01 BLAST RESISTANT TEMPERED GLASS WINDOWS
08582 08/01 ALUMINUM STORM WINDOWS
08590 08/97 WOOD WINDOWS - REPAIR AND REHABILITATION
08600 08/00 SKYLIGHTS
08710 02/02 DOOR HARDWARE
08745 08/01 ELECTRICAL LOCKING CONTROL FOR BRIGS
08800N 02/03 GLAZING
08810A 05/97 GLASS AND GLAZING
08840A 07/95 PLASTIC GLAZING
08850 07/92 FRAGMENT RETENTION FILM FOR GLASS
08900 09/99 GLAZED CURTAIN WALL

DIVISION 09 - FINISHES

09100N 09/99 METAL SUPPORT ASSEMBLIES
09200A 06/97 LATHING AND PLASTERING
09205N 09/99 FURRING AND LATHING
09212N 09/00 GYPSUM PLASTER, CEMENT PLASTER, AND STUCCO
09215A 11/95 VENEER PLASTER
09215N 09/99 VENEER PLASTER
09225A 11/95 STUCCO
09250 11/01 GYPSUM BOARD
09310 8/02 CERAMIC TILE, QUARRY TILE, AND PAVER TILE
09330 08/02 CHEMICAL-RESISTANT QUARRY TILE
09410 06/02 PORTLAND CEMENT TERRAZZO
09421A 11/95 TERRAZZO TILE
09445A 01/96 RESINOUS TERRAZZO FLOORING
09510 07/02 ACOUSTICAL CEILINGS
09611N 03/01 THIN FILM FLOORING SYSTEM FOR AIRCRAFT MAINTENANCE FACILITIES
09612N 03/01 EPOXY MORTAR FLOORING SYSTEM FOR AIRCRAFT MAINTENANCE FACILITIES
09620A 01/98 RESILIENT ATHLETIC FLOORING
09640A 11/01 WOOD STRIP FLOORING
09641N 08/01 WOOD ATHLETIC FLOORING
09643N 08/01 PORTABLE (DEMOUNTABLE) WOOD FLOORING
09645 07/02 WOOD PARQUET FLOORING
09650 08/02 RESILIENT FLOORING
09660 08/02 CONDUCTIVE VINYL FLOORING
09670 08/02 FLUID-APPLIED FLOORING
09680A 08/02 CARPET
09680N 08/01 CARPET
09685N 08/01 CARPET TILE
09720 07/02 WALLCOVERINGS
09840A 11/01 ACOUSTICAL WALL TREATMENT
09900 02/02 PAINTS AND COATINGS
09910N 03/00 MAINTENANCE, REPAIR, AND COATING OF TALL ANTENNA TOWERS
09915 08/02 COLOR SCHEDULE

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09963N 09/99 HIGH-BUILD GLAZE COATINGS
09965A 12/02 PAINTING: HYDRAULIC STRUCTURES
09965N 08/01 METALLIC TYPE CONDUCTIVE/SPARK RESISTANT CONCRETE FLOOR FINISH
09967N 09/99 COATING OF STEEL WATERFRONT STRUCTURES
09970N 09/01 INTERIOR COATING OF WELDED STEEL PETROLEUM FUEL TANKS
09971 09/01 EXTERIOR COATING OF STEEL STRUCTURES
09971A 10/00 METALLIZING: HYDRAULIC STRUCTURES
09972 09/01 INTERIOR COATING OF WELDED STEEL WATER TANKS
09973 09/01 INTERIOR COATING OF WELDED STEEL PETROLEUM FUEL TANKS
09974N 09/00 PROTECTION OF BURIED STEEL PIPING AND STEEL BULKHEAD TIE RODS
09980N 09/99 INTERIOR LINING FOR CONCRETE STORAGE TANKS (FOR PETROLEUM FUELS)
09981N 09/98 LINSEED OIL PROTECTION OF CONCRETE SURFACES
09995 01/98 PREPARATION OF HISTORIC WOOD AND METAL SURFACES FOR PAINTING

DIVISION 10 - SPECIALTIES

10100A 07/02 VISUAL COMMUNICATIONS SPECIALTIES
10153 08/02 TOILET PARTITIONS
10191N 08/01 CUBICLE TRACK AND HARDWARE
10201N 09/99 METAL [WALL] [AND] [DOOR] LOUVERS
10260 07/02 WALL AND CORNER GUARDS
10270A 01/97 RAISED FLOOR SYSTEM
10270N 09/99 ACCESS FLOORING
10430 07/02 EXTERIOR SIGNAGE
10440 07/02 INTERIOR SIGNAGE
10505N 09/99 STEEL CLOTHING LOCKERS
10605N 09/99 WIRE MESH PARTITIONS
10615A 08/00 DEMOUNTABLE PARTITIONS
10650A 08/00 OPERABLE PARTITIONS
10652N 08/01 OPERABLE PANEL PARTITIONS
10655N 08/01 ACCORDION FOLDING PARTITIONS
10675N 09/99 STEEL SHELVING
10716N 08/01 STORM SHUTTERS
10800 07/02 TOILET ACCESSORIES

DIVISION 11 - EQUIPMENT

11020 08/02 SECURITY VAULT DOOR
11022A 12/88 DOORS; FIRE-INSULATED, RECORD-VAULT
11025 08/01 FORCED ENTRY RESISTANT COMPONENTS
11035 04/00 BULLET-RESISTANT COMPONENTS
11145A 04/01 AVIATION FUELING SYSTEMS
11161 03/03 DOCK LEVELERS
11171N 08/01 PACKAGED INCINERATORS
11181A 02/90 INCINERATORS, GENERAL PURPOSE
11182A 08/01 INCINERATORS, MEDICAL WASTE
11191 09/99 DETENTION AND SECURITY WINDOWS
11192 09/99 DETENTION AND SECURITY GLAZING
11193 09/99 DETENTION HOLLOW METAL FRAMES, DOORS, AND DOOR FRAMES
11194 08/01 DETENTION HARDWARE
11195 09/99 DETENTION FURNITURE AND ACCESSORIES
11211A 12/88 PUMPS: WATER, CENTRIFUGAL
11212A 03/89 PUMPS: WATER, VERTICAL TURBINE
11215A 06/01 FANS/BLOWERS/PUMPS; OFF-GAS
11220A 01/03 PRECIPITATION/COAGULATION/FLOCCULATION WATER TREATMENT

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11225A 06/01 DOWNFLOW LIQUID ACTIVATED CARBON ADSORPTION UNITS
 11226A 04/98 VAPOR PHASE ACTIVATED CARBON ADSORPTION UNITS
 11241A 12/88 CHLORINE-FEEDING MACHINES (AUTOMATIC, SEMIAUTOMATIC AND MANUAL)
 11242A 12/01 CHEMICAL FEED SYSTEMS
 11243A 04/99 CHEMICAL TREATMENT OF WATER FOR MECHANICAL SYSTEMS
 11250A 11/01 WATER SOFTENERS, CATION-EXCHANGE (SODIUM CYCLE)
 11285A 01/94 MITER GATES
 11286A 01/94 SECTOR GATES
 11287A 01/94 TAINTER GATES AND ANCHORAGES
 11288A 07/93 VERTICAL LIFT GATES
 11289A 04/93 CLOSURE GATES
 11301A 04/99 AIR STRIPPER
 11310A 11/90 PUMPS; SEWAGE AND SLUDGE
 11311 02/02 PARALLEL PLATE [OR VERTICAL TUBE], GRAVITY OIL-WATER SEPARATOR
 11312A 04/98 SIPHONS, DOSING
 11312N 01/01 PACKAGE [GRINDER PUMP][LIFT] STATION
 11313A 04/01 PNEUMATIC SEWAGE EJECTORS
 11320N 08/01 GRIT COLLECTING EQUIPMENT
 11330A 04/89 SEWAGE BAR SCREEN AND MECHANICAL SHREDDER
 11331N 08/01 COMMINUTOR
 11334A 01/89 COMMINUTOR
 11338N 08/01 CIRCULAR CLARIFIER
 11350A 07/01 SLUDGE-COLLECTING EQUIPMENT
 11360A 06/01 RECESSED CHAMBER FILTER PRESS SYSTEM
 11365A 06/90 TRICKLING FILTER
 11375A 11/01 AIR SUPPLY AND DIFFUSION EQUIPMENT FOR SEWAGE TREATMENT
 11375N 08/01 AERATION EQUIPMENT
 11376 03/93 ULTRAVIOLET DISINFECTION EQUIPMENT
 11377 06/01 ADVANCED OXIDATION PROCESSES (AOP)
 11378 10/01 THERMAL (CATALYTIC) OXIDATION SYSTEMS
 11380 12/89 SLUDGE-DIGESTER GAS, HEATING, AND MIXING SYSTEM
 11390 08/01 PREFABRICATED BIOCHEMICAL WASTEWATER TREATMENT PLANT
 11391 08/01 CONTINUOUS LOOP REACTOR WASTEWATER TREATMENT SYSTEM
 11393 06/01 FILTRATION SYSTEM
 11400A 01/02 FOOD SERVICE EQUIPMENT
 11400N 09/99 FOOD SERVICE EQUIPMENT
 11401N 08/01 ELECTRIC KITCHEN EQUIPMENT
 11475 08/01 RADIOGRAPHIC DARKROOM EQUIPMENT
 11500A 05/01 AIR POLLUTION CONTROL
 11601N 08/01 LABORATORY EQUIPMENT AND FUMEHOODS
 11613N 08/01 STILLs AND ASSOCIATED EQUIPMENT
 11700N 08/01 GENERAL REQUIREMENTS FOR MEDICAL AND DENTAL EQUIPMENT
 11702N 08/01 MEDICAL EQUIPMENT, MISCELLANEOUS
 11704N 09/99 [CASEWORK] [AND] [MATERIAL HANDLING UNITS] IN MEDICAL FACILITIES
 11706N 09/99 HYDROTHERAPY EQUIPMENT
 11707N 08/01 HOSPITAL AND LABORATORY WASHING EQUIPMENT
 11708N 09/99 INSTALLATION OF GOVERNMENT-FURNISHED MEDICAL EQUIPMENT
 11710A 07/01 WARMING CABINETS, STERILIZERS, AND ASSOCIATED EQUIPMENT
 11712N 08/01 STERILIZERS AND ASSOCIATED EQUIPMENT
 11744N 02/03 DENTAL EQUIPMENT

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DIVISION 12 - FURNISHINGS

12301N 09/99 MANUFACTURED VANITIES
12320A 05/98 CABINETS AND COUNTERTOPS
12350A 04/99 CASEWORK FOR MEDICAL AND DENTAL FACILITIES
12351N 03/01 MEDICAL AND DENTAL CASEWORK
12352N 09/99 RESIDENTIAL CASEWORK
12490A 01/98 WINDOW TREATMENT
12490N 09/99 BLINDS, VENETIAN (AND AUDIO VISUAL)
12491N 08/01 CURTAINS AND DRAPES
12600A 03/02 THEATER CHAIRS
12601N 09/99 THEATER SEATING
12705 06/01 FURNITURE SYSTEMS

DIVISION 13 - SPECIAL CONSTRUCTION

13034N 08/01 PREFABRICATED AUDIOMETRIC ROOMS
13038 08/01 COLD-STORAGE ROOMS (PREFABRICATED PANEL TYPE)
13080 04/99 SPECIAL SEISMIC PROTECTION FOR MISCELLANEOUS EQUIPMENT
13090A 01/94 X-RAY SHIELDING
13092N 09/99 X-RAY SHIELDING
13093N 12/01 RADIO FREQUENCY SHIELDED ENCLOSURES, DEMOUNTABLE TYPE
13094N 12/01 RADIO FREQUENCY SHIELDED ENCLOSURES, WELDED TYPE
13095A 07/01 ELECTROMAGNETIC (EM) SHIELDING
13095N 09/99 HEMP SHIELDED DOOR
13100A 07/01 LIGHTNING PROTECTION SYSTEM
13100N 02/03 LIGHTNING PROTECTION SYSTEM
13110A 11/98 CATHODIC PROTECTION SYSTEM (SACRIFICIAL ANODE)
13110N 09/00 CATHODIC PROTECTION BY GALVANIC ANODES
13111A 11/98 CATHODIC PROTECTION SYSTEM (STEEL WATER TANKS)
13111N 08/01 CATHODIC PROTECTION BY IMPRESSED CURRENT
13112A 11/98 CATHODIC PROTECTION SYSTEM (IMPRESSED CURRENT)
13112N 03/00 CATHODIC PROTECTION SYSTEM (STEEL WATER TANKS)
13113A 09/01 CATHODIC PROTECTION SYSTEMS (IMPRESSED CURRENT)FOR LOCK MITER GATES
13120A 01/02 STANDARD METAL BUILDING SYSTEMS
13121A 01/02 METAL BUILDING SYSTEMS (MINOR REQUIREMENTS)
13121N 08/01 PREENGINEERED METAL BUILDINGS
13202A 07/02 FUEL STORAGE SYSTEMS
13203A 08/93 TIGHTNESS TESTING OF UNDERGROUND FUEL SYSTEMS
13205N 06/02 STEEL TANKS WITH FIXED ROOFS
13206A 02/02 STEEL STANDPIPES AND GROUND STORAGE RESERVOIRS
13208N 09/99 WIRE-WOUND CIRCULAR PRESTRESSED-CONCRETE WATER TANK
13209N 09/00 WATER STORAGE TANKS
13210A 02/02 ELEVATED STEEL WATER TANK
13210N 2/02 ABOVEGROUND FUEL OIL STORAGE TANKS
13211A 07/89 PRESSURE VESSELS FOR STORAGE OF COMPRESSED GASES
13216N 09/99 UNDERGROUND PETROLEUM TANKS
13217N 09/99 FIBERGLASS-PLASTIC LINING FOR STEEL TANK BOTTOMS (FOR PETROLEUM)
13219N 09/99 CLEANING PETROLEUM STORAGE TANKS
13234A 04/01 FLOATING COVER FOR SLUDGE-DIGESTION TANKS
13280A 11/01 ASBESTOS ABATEMENT
13281A 03/02 LEAD HAZARD CONTROL ACTIVITIES
13281N 01/02 ENGINEERING CONTROL OF ASBESTOS CONTAINING MATERIALS
13282N 02/02 LEAD IN CONSTRUCTION

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13283N 02/02 REMOVAL/CONTROL AND DISPOSAL OF PAINT WITH LEAD
 13284N 09/99 REMOVAL AND DISPOSAL OF POLYCHLORINATED BIPHENYLS (PCBs)
 13285N 09/99 REMOVAL AND DISPOSAL OF PCB CONTAMINATED SOILS
 13286N 01/01 HANDLING OF LIGHTING BALLASTS AND LAMPS CONTAINING PCBs AND MERCURY
 13287N 09/99 RADON MITIGATION
 13290A 03/89 COMPOSTING TOILET
 13401N 09/99 FLOW MEASURING EQUIPMENT [POTABLE WATER] [SEWAGE TREATMENT PLANT]
 13405A 01/03 PROCESS CONTROL
 13420A 11/97 SELF-ACTING BLAST VALVES
 13451A 06/02 POWER MONITORING SYSTEM
 13600A 08/01 SOLAR WATER HEATING EQUIPMENT
 13610N 09/99 SOLAR LIQUID FLAT PLATE COLLECTORS
 13702N 09/99 BASIC INTRUSION DETECTION SYSTEMS (IDS)
 13703N 09/99 COMMERCIAL INTRUSION DETECTION SYSTEMS (IDS)
 13720A 05/98 ELECTRONIC SECURITY SYSTEM
 13721A 03/97 SMALL INTRUSION DETECTION SYSTEM
 13798 02/03 DURESS SIGNAL SYSTEM [FOR BRIG FACILITIES]
 13799 02/03 WATCHTOUR SYSTEM [FOR BRIG FACILITIES]
 13801A 12/01 UTILITY MONITORING AND CONTROL SYSTEM (UMCS)
 13814A 04/89 BUILDING PREPARATION FOR ENERGY MONITORING AND CONTROL SYSTEMS (EMCS)
 13820A 04/01 MULTI-BUILDING EXPANSION OF ENERGY MONITORING AND CONTROL SYSTEMS
 13850A 02/02 FIRE DETECTION AND ALARM SYSTEM, DIRECT CURRENT LOOP
 13851A 02/02 FIRE DETECTION AND ALARM SYSTEM, ADDRESSABLE
 13851N 02/03 EXTERIOR FIRE ALARM SYSTEM, CLOSED CIRCUIT TELEGRAPHIC TYPE
 13852A 11/97 FIRE ALARM REPORTING SYSTEM, RADIO TYPE
 13852N 02/03 INTERIOR FIRE DETECTION AND ALARM SYSTEM
 13853A 11/97 CENTRAL FIRE ALARM SYSTEM, DIGITAL ALARM COMMUNICATOR TYPE
 13853N 02/03 FIRE ALARM SYSTEM, RADIO TYPE
 13854N 08/00 FIRE ALARM REPORTING SYSTEMS - DIGITAL COMMUNICATORS
 13855N 03/00 ANALOG/ADDRESSABLE INTERIOR FIRE ALARM SYSTEM
 13856N 04/02 CARBON MONOXIDE DETECTORS
 13920A 12/01 FIRE PUMPS
 13920N 09/99 FIRE PUMPS
 13930A 03/03 WET PIPE SPRINKLER SYSTEM, FIRE PROTECTION
 13930N 09/99 WET-PIPE FIRE SUPPRESSION SPRINKLERS
 13931N 09/99 FIRE EXTINGUISHING SPRINKLER SYSTEMS (RESIDENTIAL)
 13935A 03/03 DRY PIPE SPRINKLER SYSTEM, FIRE PROTECTION
 13935N 09/99 DRY-PIPE FIRE SPRINKLER SYSTEMS
 13945A 03/03 PREACTION AND DELUGE SPRINKLER SYSTEMS, FIRE PROTECTION
 13945N 09/99 [DELUGE] [PREACTION] FIRE SPRINKLER SYSTEMS
 13955A 12/01 AQUEOUS FILM-FORMING FOAM (AFFF) FIRE PROTECTION SYSTEM
 13956N 09/99 FOAM FIRE EXTINGUISHING FOR AIRCRAFT HANGARS
 13957N 09/99 FOAM FIRE EXTINGUISHING FOR FUEL TANK PROTECTION
 13958N 09/99 FOAM FIRE EXTINGUISHING FOR HAZ/FLAM MATERIAL FACILITY
 13961N 09/99 CARBON DIOXIDE FIRE EXTINGUISHING (HIGH PRESSURE)
 13962N 09/99 CARBON DIOXIDE FIRE EXTINGUISHING (LOW PRESSURE)
 13965A 12/01 WET CHEMICAL FIRE EXTINGUISHING SYSTEM
 13966N 09/00 HALON 1301 FIRE EXTINGUISHING
 13971N 09/00 WET CHEMICAL FIRE EXTINGUISHING FOR KITCHEN CABINET

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13975N 02/01 STANDPIPE SYSTEMS

DIVISION 14 - CONVEYING SYSTEMS

14210A 08/01 ELEVATORS, ELECTRIC
14210N 03/01 ELECTRIC TRACTION ELEVATORS
14211A 01/94 ELEVATORS, ELECTRIC, FOR CIVIL WORKS
14240 09/02 HYDRAULIC ELEVATORS
14534N 09/99 MONORAILS WITH MANUAL HOIST
14535N 09/99 MONORAILS WITH AIR MOTOR POWERED HOIST
14580A 08/01 PNEUMATIC-TUBE SYSTEM
14601A 04/94 CRANES, BRIDGE & GANTRY, TOP RUNNING, 30-TON MAXIMUM CAPACITY
14602A 11/02 CRANES, SINGLE-GIRDER BRIDGE, MONORAIL AND JIB
14606N 11/02 PORTAL CRANE TRACK INSTALLATION
14622N 02/03 MONORAILS WITH ELECTRIC POWERED HOISTS
14630A 05/93 OVERHEAD ELECTRIC CRANES
14636N 02/03 CRANES, OVERHEAD ELECTRIC, TOP RUNNING (UNDER 20,000 POUNDS)
14637N 02/03 CRANES, OVERHEAD ELECTRIC, UNDERRUNNING (UNDER 20,000 POUNDS)

DIVISION 15 - MECHANICAL

15005A 12/01 SPEED REDUCERS FOR STORM WATER PUMPS
15010A 12/01 HYDRAULIC POWER SYSTEMS FOR CIVIL WORKS STRUCTURES
15050N 09/01 BASIC MECHANICAL MATERIALS AND METHODS
15070A 01/02 SEISMIC PROTECTION FOR MECHANICAL EQUIPMENT
15070N 09/99 MECHANICAL SOUND, VIBRATION, AND SEISMIC CONTROL
15080A 07/02 THERMAL INSULATION FOR MECHANICAL SYSTEMS
15080N 09/99 MECHANICAL INSULATION
15081N 09/99 EXTERIOR PIPING INSULATION
15131A 02/02 VERTICAL PUMPS, AXIAL-FLOW AND MIXED-FLOW IMPELLER-TYPE
15132A 12/02 SUBMERSIBLE PUMP, AXIAL-FLOW AND MIXED-FLOW TYPE
15133A 02/03 DIESEL/NATURAL GAS FUELED ENGINE PUMP DRIVES
15181A 02/03 CHILLED AND CONDENSER WATER PIPING AND ACCESSORIES
15181N 09/99 CHILLED, CONDENSER, OR DUAL SERVICE WATER PIPING
15182A 02/03 REFRIGERANT PIPING
15182N 09/99 REFRIGERANT PIPING
15183N 09/99 STEAM SYSTEM AND TERMINAL UNITS
15184N 09/99 [HIGH][MEDIUM] TEMPERATURE WATER SYSTEM WITHIN BUILDINGS
15185N 09/99 LOW TEMPERATURE WATER [LTW] HEATING SYSTEM
15190A 03/03 GAS PIPING SYSTEMS
15191N 09/99 FIBERGLASS REINFORCED PLASTIC (FRP) PIPING (FOR PETROLEUM)
15192N 09/99 FUEL OIL PIPING
15193N 09/99 GASOLINE/DIESEL DISPENSING SYSTEMS
15194N 02/03 AVIATION FUEL DISTRIBUTION AND DISPENSING
15195N 09/99 NATURAL GAS AND LIQUID PETROLEUM PIPING
15200A 03/02 PIPELINES, LIQUID PROCESS PIPING
15211N 09/99 LOW PRESSURE COMPRESSED AIR PIPING (NON-BREATHING AIR TYPE)
15212N 09/99 HIGH AND MEDIUM PRESSURE COMPRESSED AIR PIPING
15213N 09/99 LARGE CENTRIFUGAL AIR COMPRESSORS (OVER 200 HP)
15214N 09/99 LARGE NONLUBRICATED RECIPROCATING AIR COMPRESSORS (OVER 300 HP)
15215N 09/99 NONLUBRICATED ROTARY SCREW AIR COMPRESSORS (100 HP AND LARGER)
15216N 09/99 WELDING PRESSURE PIPING
15217N 09/99 MEDICAL GAS AND VACUUM PIPING
15400A 03/03 PLUMBING, GENERAL PURPOSE
15400N 06/01 PLUMBING SYSTEMS
15405A 03/03 PLUMBING, HOSPITAL

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15411N 09/99 HOSPITAL PLUMBING FIXTURES
 15495A 12/01 HYDRAULIC FLUID POWER SYSTEMS
 15500A 12/01 DESICCANT COOLING SYSTEMS
 15501N 09/99 STEAM HEATING PLANT WATERTUBE (SHOP ASSEMBLED) COAL/OIL OR COAL
 15502N 09/99 STEAM HEATING PLANT WATERTUBE (FIELD ERECTED) COAL/OIL OR COAL
 15511N 09/99 WATER-TUBE BOILERS, OIL/GAS OR OIL
 15514N 09/99 LOW PRESSURE WATER HEATING BOILERS (UNDER 800,000 BTU/HR OUTPUT)
 15515N 09/99 LOW PRESSURE WATER HEATING BOILERS (OVER 800,000 BTU/HR OUTPUT)
 15516N 09/99 STEAM BOILERS AND EQUIPMENT (500,000 - 18,000,000 BTU/HR)
 15517N 09/99 STEAM BOILERS AND EQUIPMENT (18,000,000 - 60,000,000 BTU/HR)
 15532N 09/99 WARM AIR HEATING SYSTEMS
 15555A 02/02 CENTRAL HIGH TEMPERATURE WATER (HTW) GENERATING PLANT AND AUXILIARIES
 15556A 02/02 FORCED HOT WATER HEATING SYSTEMS USING WATER AND STEAM HEAT EXCHANGERS
 15559A 03/89 CENTRAL STEAM-GENERATING SYSTEM, COAL-FIRED
 15561A 09/01 CENTRAL STEAM GENERATING SYSTEM - COMBINATION GAS AND OIL FIRED
 15562A 07/01 HEATING AND UTILITIES SYSTEMS, CENTRAL STEAM
 15565A 12/01 HEATING SYSTEM; GAS-FIRED HEATERS
 15566A 12/01 WARM AIR HEATING SYSTEMS
 15569A 02/03 WATER AND STEAM HEATING; OIL, GAS OR BOTH; UP TO 20 MBTUH
 15601N 05/01 CENTRAL REFRIGERATION EQUIPMENT FOR AIR CONDITIONING
 15602N 09/99 REFRIGERATION EQUIPMENT FOR COLD STORAGE
 15620A 06/02 LIQUID CHILLERS
 15645A 12/01 COOLING TOWER
 15652A 12/01 COLD STORAGE REFRIGERATION SYSTEMS
 15690A 12/01 EVAPORATIVE COOLING SYSTEMS
 15700A 12/01 UNITARY HEATING AND COOLING EQUIPMENT
 15702N 2/02 COMPUTER ROOM AIR CONDITIONING UNITS
 15720N 09/99 AIR HANDLING UNITS
 15721N 09/99 EVAPORATIVE COOLING SYSTEM
 15730N 09/99 UNITARY AIR CONDITIONING EQUIPMENT
 15741 11/99 VERTICAL GROUND-COUPLED HEAT EXCHANGE SYSTEMS (VGCHES)
 15741N 02/03 WATER SOURCE HEAT PUMP SYSTEMS
 15751N 09/99 DESICCANT DEHUMIDIFICATION EQUIPMENT
 15760N 09/99 TERMINAL HEATING AND COOLING UNITS
 15768N 09/99 ELECTRIC SPACE HEATING EQUIPMENT
 15801N 09/99 INDUSTRIAL VENTILATION AND EXHAUST
 15810N 09/99 DUCTWORK AND DUCTWORK ACCESSORIES
 15845A 12/01 ENERGY RECOVERY SYSTEMS
 15846A 12/01 HEAT RECOVERY BOILERS
 15848A 12/01 THERMAL ENERGY STORAGE UNITS: ICE-ON-COIL
 15860A 12/01 CHEMICAL, BIOLOGICAL, AND RADIOLOGICAL (CBR) AIR FILTRATION SYSTEM
 15861N 09/99 MECHANICAL CYCLONE DUST COLLECTOR OF FLUE GAS PARTICULATES
 15862N 09/99 ELECTROSTATIC DUST COLLECTOR OF FLUE GAS PARTICULATES
 15863N 09/99 FABRIC FILTER DUST COLLECTOR OF FLY ASH PARTICLES IN FLUE GAS
 15864N 09/99 DUST AND GAS COLLECTOR, DRY SCRUBBER AND FABRIC FILTER TYPE
 15895 02/03 AIR SUPPLY, DISTRIBUTION, VENTILATION, AND EXHAUST SYSTEM
 15901N 02/02 SPACE TEMPERATURE CONTROL SYSTEMS
 15910N 09/01 DIRECT DIGITAL CONTROL SYSTEMS
 15940A 12/01 OVERHEAD VEHICLE TAILPIPE [AND WELDING FUME] EXHAUST REMOVAL SYSTEM(S)

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15950A 12/01 HEATING, VENTILATING AND AIR CONDITIONING (HVAC) CONTROL SYSTEMS

15950N 02/03 HVAC TESTING/ADJUSTING/BALANCING

15951A 12/01 DIRECT DIGITAL CONTROL FOR HVAC

15951N 09/99 TESTING INDUSTRIAL VENTILATION SYSTEMS

15990A 12/02 TESTING, ADJUSTING, AND BALANCING OF HVAC SYSTEMS

15995A 12/01 COMMISSIONING OF HVAC SYSTEMS

DIVISION 16 - ELECTRICAL

16050N 02/03 BASIC ELECTRICAL MATERIALS AND METHODS

16070A 04/99 SEISMIC PROTECTION FOR ELECTRICAL EQUIPMENT

16081N 02/03 APPARATUS INSPECTION AND TESTING

16113A 11/92 UNDERFLOOR DUCT SYSTEM

16115A 11/92 UNDERFLOOR RACEWAY SYSTEM (CELLULAR STEEL FLOOR)

16120A 11/91 INSULATED WIRE AND CABLE

16130N 09/99 UNDERFLOOR RACEWAY SYSTEM

16145N 02/03 480 V PIER POWER OUTLET ASSEMBLIES

16221A 11/92 ELECTRIC MOTORS, 3-PHASE VERTICAL INDUCTION TYPE

16222A 09/93 ELECTRIC MOTORS, 3-PHASE VERTICAL SYNCHRONOUS TYPE

16230N 09/99 DIESEL-ELECTRIC GENERATORS (DESIGN 1) 500 TO 2,500 KW - PRIME DUTY

16231N 09/99 DIESEL-ELECTRIC GENERATORS (DESIGN 2) 2,501 KW OR LARGER - PRIME DUTY

16232N 09/00 STANDBY DIESEL-ELECTRIC GENERATORS (DESIGN 3) 301 TO 1,000 KW

16233N 09/99 STANDBY DIESEL-ELECTRIC GENERATORS (DESIGN 4) 1,001 KW OR LARGER

16234N 09/99 DIESEL ENGINE-GENERATOR SETS - PRIME AND STANDBY - 10 TO 500 KW

16236N 09/00 MOTOR-GENERATOR SETS, 400 HERTZ (HZ)

16237N 02/03 SINGLE OPERATION GENERATOR SETS

16261N 09/99 VARIABLE FREQUENCY DRIVE SYSTEMS UNDER 600 VOLTS

16262N 09/99 INSTALLATION OF UNINTERRUPTIBLE POWER SUPPLY (UPS) SYSTEM

16263A 06/02 DIESEL-GENERATOR SET STATIONARY 100-2500 KW, WITH AUXILIARIES

16264A 06/02 DIESEL-GENERATOR SET, STATIONARY 15-300 KW, STANDBY APPLICATIONS

16265A 09/98 UNINTERRUPTIBLE POWER SUPPLY (UPS) SYSTEM ABOVE 15 KVA CAPACITY

16268N 03/01 400-HERTZ (HZ) SOLID STATE FREQUENCY CONVERTER

16272N 02/03 THREE-PHASE PAD-MOUNTED TRANSFORMERS

16273N 02/03 SINGLE-PHASE PAD-MOUNTED TRANSFORMERS

16280N 02/03 RADIO FREQUENCY INTERFERENCE POWER LINE FILTERS

16301N 02/03 OVERHEAD TRANSMISSION AND DISTRIBUTION

16302N 02/03 UNDERGROUND TRANSMISSION AND DISTRIBUTION

16311A 05/01 MAIN ELECTRIC SUPPLY STATION AND SUBSTATION

16341N 02/03 SF6 INSULATED PAD-MOUNTED SWITCHGEAR

16360N 02/03 SECONDARY UNIT SUBSTATIONS

16361N 02/03 PRIMARY UNIT SUBSTATION

16370A 07/02 ELECTRICAL DISTRIBUTION SYSTEM, AERIAL

16375A 02/02 ELECTRICAL DISTRIBUTION SYSTEM, UNDERGROUND

16402N 02/03 INTERIOR DISTRIBUTION SYSTEM

16403A 08/95 MOTOR CONTROL CENTERS, SWITCHBOARDS AND PANELBOARDS

16404A 11/92 480-VOLT STATION SERVICE SWITCHGEAR AND TRANSFORMERS

16407N 09/99 MARINA ELECTRICAL WORK

16410A 07/01 AUTOMATIC TRANSFER SWITCH AND BY-PASS/ISOLATION SWITCH

16410N 02/03 AUTOMATIC TRANSFER SWITCHES

16415A 06/02 ELECTRICAL WORK, INTERIOR

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16442N 02/03 SWITCHBOARDS AND SWITCHGEAR
16475A 08/02 COORDINATED POWER SYSTEM PROTECTION
16510N 02/03 INTERIOR LIGHTING
16520N 02/03 EXTERIOR LIGHTING
16522N 03/01 AIRFIELD LIGHTING
16525A 09/92 HELIPAD LIGHTING AND VISUAL NAVIGATION AIDS
16526A 08/01 AIRFIELD AND HELIPORT LIGHTING AND VISUAL NAVIGATION AIDS
16528A 05/01 EXTERIOR LIGHTING INCLUDING SECURITY AND CCTV APPLICATIONS
16553N 09/99 SURGICAL LIGHTING FIXTURES
16665A 07/89 STATIC ELECTRICITY PROTECTION SYSTEM
16710A 09/02 PREMISES DISTRIBUTION SYSTEM
16710N 02/03 STRUCTURED TELECOMMUNICATIONS CABLING AND PATHWAY SYSTEM
16711A 11/01 TELEPHONE SYSTEM, OUTSIDE PLANT
16713N 02/03 FIBER OPTIC (FO) OUTSIDE PLANT (OSP) MEDIA
16720N 02/02 ADMINISTRATIVE TELEPHONE EQUIPMENT, INSIDE PLANT
16721 10/02 INTERCOMMUNICATION SYSTEM
16721N 02/03 TELEPHONE DISTRIBUTION SYSTEM, OUTSIDE PLANT
16722N 02/03 PIER TELEPHONE DISTRIBUTION SYSTEMS
16725N 09/00 NURSE CALL SYSTEM
16730A 11/02 NURSE CALL TONE-VISUAL (NCTV) SYSTEM
16731A 11/02 NURSE CALL AUDIO-VISUAL (NCAV) SYSTEM
16751A 08/00 CLOSED CIRCUIT TELEVISION SYSTEMS
16755A 04/01 RADIO PAGING SYSTEM
16768A 08/94 FIBER OPTIC DATA TRANSMISSION SYSTEM
16770 04/02 RADIO AND PUBLIC ADDRESS SYSTEMS
16782N 09/99 [MASTER] [COMMUNITY] ANTENNA TELEVISION SYSTEM
16783N 02/03 COMMUNITY ANTENNA TELEVISION (CATV) SYSTEMS
16785A 10/01 TELEVISION SIGNAL RECEPTION SYSTEM
16790A 03/89 STAND-ALONE ONE-WAY RADIO CONTROL SYSTEM
16792A 12/96 WIRE LINE DATA TRANSMISSION SYSTEM
16794A 04/91 COAXIAL CABLE DATA TRANSMISSION MEDIA
16797A 07/94 ONE-WAY FM RADIO CONTROL/UTILITY MONITORING & CONTROL SYSTEM
(UMCS)
16798A 03/89 TWO-WAY RADIO DATA TRANSMISSION SYSTEM
16815A 10/01 CABLE TELEVISION PREMISES DISTRIBUTION SYSTEM
16822N 09/99 INTERCOMMUNICATION SYSTEM
16905A 09/93 ELECTRICAL EQUIPMENT FOR GATE HOIST
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AVAILABLE EDITED AND UNEDITED GUIDE SPECIFICATIONS (ON CD-ROM)

ATTACHMENT 7

RECOMMENDATIONS FOR WINDOWS IN PROPOSED ELLSWORTH AFB B1-B SQUAD OPS/AMU 17 JULY 2001*

* - The attached Modifications dated 20 May 2003 supersede the requirements contained in this report.

1. Background. This document contains recommendations by the U.S. Army Corps of Engineers (USACE) Protective Design Center (PDC) for windows in the proposed Ellsworth B1-B Squadron Operations/AMU. The recommendations provided in this document concern explosive safety issues only. These recommendations are not meant to lessen the requirements for other loadings and code provisions. Text Deleted.

2. South Elevation. Text Deleted. Table 2 provides recommended window sections along with the edge shears to design the connection of the frame to the walls and frame to frame for this elevation. It was assumed that all windows would be insulated glazing units (IGU) and that doors may be IGU or single pane units. All laminated glass shall have a minimum of 0.060-in thickness of PVB interlayer.

3. North, East, & West Elevations. Text Deleted. Table 3 provides recommend window sections along with the edge shears to design the connection of the frame to the walls and frame to frame for these elevations. It was assumed that all windows would be insulated glazing units (IGU) and that doors may be IGU or single pane units. All laminated glass shall have a minimum of 0.060-in thickness of PVB interlayer.

4. Framing Requirements.

- a. All glazing must be wet glazed in the frame with structural silicon.
- b. A minimum of 3/4" glazing bite (extension of window into the frame) must be provided.
- c. Connections of frame to walls and frame to frame must be capable of supporting the static edge shears shown in Tables 2 and 3.
- d. Frames must meet the requirements of American Aluminum Manufacturers Association (AAMA) 101 (Voluntary Specifications for Aluminum, Vinyl (PVC) and Wood Windows and Glass Doors) for aluminum architectural windows – optional performance class 60 (AW-60).

5. Force Protection Construction Requirements. The Interim DoD Antiterrorism/Force Protection Construction Standards (December 16, 1999) as well as the Air Force Errata to the DoD Standards (15 Feb 00, HQ AFCEA/CESC Memorandum) will apply to this project if constructed with FY02 or beyond appropriations. These standards have minimum standoffs from parking and roadways (80-ft) and installation boundaries (150-ft) for primary gathering buildings such as a Squad Ops. If these standoffs are not provided the windows must be designed to resist the threats considered in the standards at

the available standoff. The requirements for force protection may be greater than those for explosive safety.

6. Additional Comments.

a. Text Deleted.

b. Every effort was made to safely reduce the requirements of the windows. For this reason it is imperative that all framing and anchorage recommendations be followed. If the recommendations are not followed costly retrofit will be required to provide the level of protection intended.

c. Cost savings for windows could be achieved by reducing the spans of the glazing. For example, if the middle lite of the Type B window (2'-0" x 12'-4") were split into two lites (2'-0" x 6'-2") the requirement for the windows on the South elevations would be reduced from 1/2" panes to 3/8" panes.

Table 1. Deleted.

Table 2. Windows Required on South Elevation

Window Type	Inner Pane		Outer Pane		Edge Shears	
	Material	Thickness (in)	Material Thickness (in)		Short (#/in)	Long (#/in)
A₁	Laminated Annealed	3/8	Monolithic Annealed	3/8	115	145
B	Laminated Annealed	1/2	Monolithic Annealed	1/2	145	286
C	Laminated Annealed	3/8	Monolithic Annealed	3/8	111	149
D	Laminated Annealed	3/8	Monolithic Annealed	3/8	123	157
E	Laminated Annealed	1/4	Monolithic Annealed	1/4	35 48	48
	Laminated Annealed	1/4	(Single Pane Option)		35	48
F	Laminated Annealed	3/8	Monolithic Annealed	3/8	116	163
	Laminated Annealed	3/4	(Single Pane Option)		116	163
G	Laminated Annealed	3/8	Monolithic Annealed	3/8	106	140

¹ – Assumes that potential lines of internal supplementary structure are present. If these supplementary structures are not present the window shown above will not be valid.

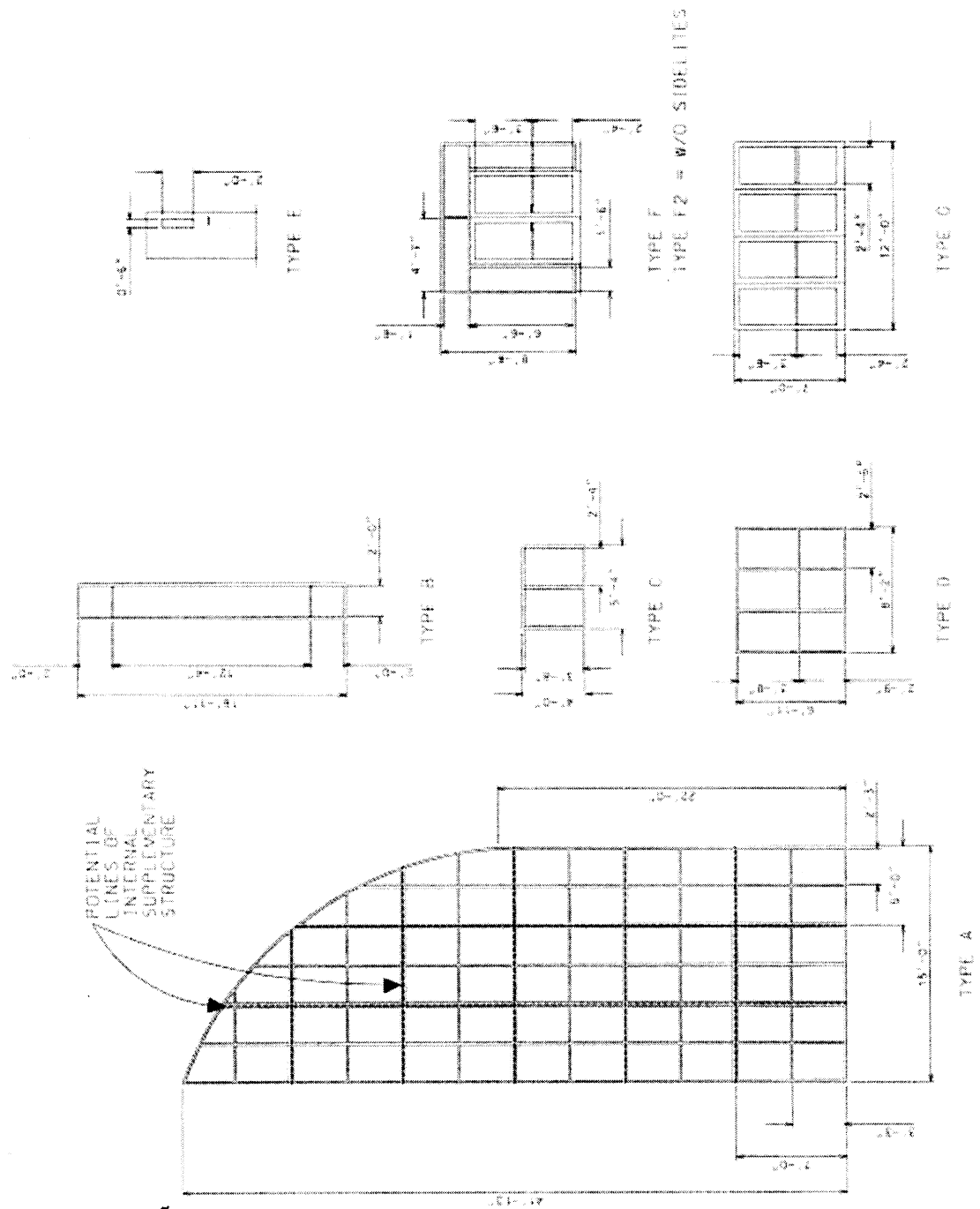
Table 3. Windows Required on North, East & West Elevations.

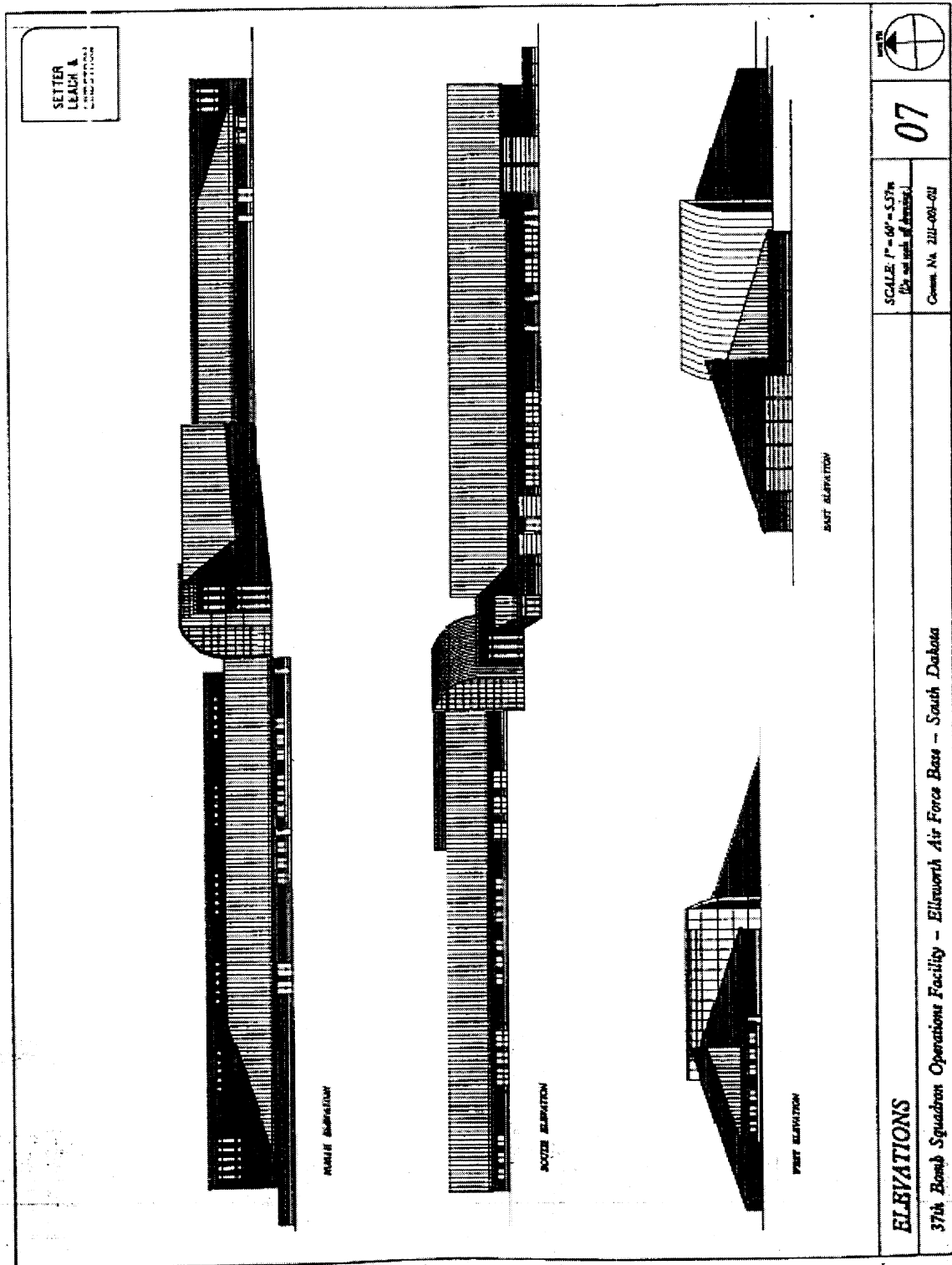
Window Type		Inner Pane	Outer Pane		Edge Shears	
Material		Thickness (in)	Material	Thickness (in)	Short (#/in)	Long (#/in)
A₁	Laminated Annealed	1/4"	Monolithic Annealed	1/4"	58	73
B	Laminated Annealed	3/8"	Monolithic Annealed	3/8"	65	128
C	Laminated Annealed	1/4"	Monolithic Annealed	1/4"	56	75
D	Laminated Annealed	1/4"	Monolithic Annealed	1/4"	61	79
E	Laminated Annealed	1/4"	Monolithic Annealed	1/4"	16	22
	Laminated Annealed	1/4"	(Single Pane Option)		16	22
F	Laminated Annealed	1/4"	Monolithic Annealed	1/4"	56	79
	Laminated Annealed	1/2"	(Single Pane Option)		56	79
G	Laminated Annealed	1/4"	Monolithic Annealed	1/4"	53	70

¹ – Assumes that potential lines of internal supplementary structure are present. If these supplementary structures are not present the window shown above will not be valid.

Attachment – pg. 1 Attachment – pg. 2 Attachment – pg. 3 Attachment – pg. 4

Page 1 Attachment – Deleted.





MODIFICATIONS TO
"RECOMMENDATIONS FOR WINDOWS IN
PROPOSED ELLSWORTH AFB B1-B SQUAD OPS/AMU"

20 MAY 2003

Minutes from 31 March 2003 meeting at USACE Protective Design Center in Omaha

Regarding the tall windowwalls at the end walls of the Lobby space; the overall windowwall elevation will be subdivided with structural steel sub-framing into opening sizes that are about the same as shown in the CCD. The steel members do not have to remain elastic; the steel may yield.

The numbers used in the report represent ultimate loads, as opposed to working loads.

TM 5-1300 is still the current criteria document for design that resists blasts.

The sub-framing in the end walls of the Lobby will be designed to resist wind loads, and the connections of these members to the main steel framing columns need to be designed to go plastic (deform) under the design load from a blast. There are limits, however, to how far you can let the sub-framing go plastic (ductility limits.) It is assumed that if there were a blast, the damaged parts of the building would have to be demolished and rebuilt (it doesn't have to remain undamaged, but the glass has to stay intact so it doesn't become airborne shards.) Also, the windowwall framing must not be allowed to collapse, as this would be an unacceptable danger to occupants.

The design engineer may use dynamic load analysis.

"Kalwall" translucent wall panels will not be subject to the requirements of the Report.

The original CCD design concept of the windowwall will remain intact.

Minutes from 30 April 2003 and 1 May 2003 meetings at Ellsworth AFB

Per the Ellsworth AFB Weapons Safety Office and ACC, the interior glazing must be laminated glass, but does not have to be designed with special frames and thicker glass like the exterior glazing.

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ATTACHMENT. NO 8

EXCERPTS FROM AFI 31-101 AIR FORCE INSTALLATION SECURITY PROGRAM (1 MARCH 2003), PARAGRAPH 23.3.THRU 23.3.5

23.3. AA&E Facility Criteria. The procedures outlined in this paragraph apply to government-owned facilities. AA&E facilities at land based facilities shall be constructed in accordance with the criteria in this publication and **DoD 5100.76-M, *Physical Security of Sensitive Arms, Ammunition, and Explosives***. **NOTE:** See **Attachment 9** of this instruction for contractor-owned facilities.

23.3.1. Facility Upgrades. Existing facilities shall be security upgraded IAW the requirements of this publication and **DoD 5100.76-M**. Such facilities shall be prioritized for upgrade as follows. See **MIL-Handbook 1013/1A**.

23.3.1.1. Facilities storing Category I items.

23.3.1.2. Facilities storing Category II items.

23.3.1.3. Facilities storing Category III and IV items.

23.3.2. Protection of Category I, II, and III Missiles and Rockets, and all Categories of Ammunition and Explosives in Bulk Storage Areas. These categories shall be stored in fixed structure magazines prescribed in **DoD 6055.9-STD, *DoD Ammunition and Explosive Safety Standards***. If existing facilities cannot be structurally upgraded to meet the 10-minute delay factor, AA&E shall not be stored therein. **MIL-HBK 1013/1A, *Military Handbook, Designing Guidelines for Physical Security of Fixed Land-Based Facilities***, contains guidance on security structural upgrading.

23.3.2.1. Windows and other openings in existing facilities shall be kept to a minimum and sealed with material comparable to the adjacent walls. Windows, ducts, vents, or similar openings 96 square inches or more with the least dimension greater than 6 inches shall be equipped with any of the following.

23.3.2.1.1. 3/8 inch or larger hardened steel bars not more than 4 inches apart with horizontal bars welded to the vertical bars so that the openings do not exceed 32 square inches.

23.3.2.1.2. Number 8-gauge high carbon manganese steel mesh with 2-inch diamond grid. Number 6-gauge steel mesh may be used if number 8-gauge is not available.

23.3.2.1.3. The bars or steel mesh shall be securely embedded in the structure of the building or welded to a steel frame securely attached to the wall with fastenings inaccessible from the exterior of the facility.

23.3.2.2. These categories shall normally be stored in original containers, banded, and sealed to reflect the integrity of the contents. Containers weighing less than 500 pounds shall be fastened to the structure (or fastened together in groups which have a total weight exceeding 500 pounds with bolts or chains secured with low security padlocks meeting **commercial item description (CID) A-A-1927**. Locks assigned National Stock Number (NSN) 5340-00158-3805, NSN 5340-00-158-3807, NSN 5340-01-408-8434, or NSN 5340-01-2699345, meets this CID. See **paragraph 23.3.4.1.1** for detailed information on bolts and chains.

23.3.2.3. Owner/users shall strictly control vehicular and pedestrian entry into and exit from the storage areas. A system of random inspections of vehicles and personnel entering and exiting the storage facilities shall be established. Entry records shall be maintained for a minimum of 90 days. Privately owned vehicles are prohibited in storage areas.

23.3.2.4. Each magazine and/or facility storing Missiles and Rockets (Category I, II, and III), and Category I and II ammunition and/or explosives will be equipped with two levels of IDE, unless continuously manned or under constant surveillance. In addition to the IDE, an armed owner/user guard shall check all alarmed structures in the areas daily during non-duty hours. IDE requirements for Category III and IV ammunition and/or explosives storage structures will be determined by the MAJCOM. They also require guard checks during non-duty hours.

23.3.2.5. Storage structures shall be secured with high security padlocks and hasps.

23.3.2.6. The perimeter of Category I and II storage areas shall be fenced as follows.

23.3.2.6.1. Fence fabric shall be chain link (galvanized, aluminized, or plastic coated woven steel) 2-inch square mesh 9-gauge diameter wire, including coating. In Europe, fencing may be North Atlantic Treaty Organization (NATO) Standard Design Fencing (2.5-3 mm gauge, 76 mm grid opening, 2 meter height, and 3.76 meter post separation).

23.3.2.6.2. The minimum height of the fence fabric shall be 6 feet (excluding mandatory top guard/outrigger) and will extend to within two inches of the ground.

23.3.2.6.3. Posts, braces, and other structural components are located on the inside of the fence fabric.

23.3.2.6.4. Clear zones shall be established and shall extend 12 feet on the outside and 30 feet on the inside (available real estate permitting).

23.3.2.6.5. The perimeter fence shall have a minimum number of vehicular and pedestrian gates, consistent with operational requirements. Unless continuously guarded, gates shall be secured with locking devices approved by the MAJCOMs. Hinge pins shall be welded (or otherwise secured).

23.3.2.6.6. Drainage structures and water passages penetrating the fence having a cross sectional area greater than 90 square inches and a dimension greater than 6 inches shall be barred.

23.3.2.6.7. Exterior building and door lighting shall be provided for all structures storing Category I and II items. The lighting shall be of sufficient intensity to allow detection of unauthorized activity. Switches for exterior lights shall be installed in such a manner that they are accessible only to authorized individuals. The necessity for perimeter lighting shall be determined by the ISC based on the local threat.

23.3.2.6.8. Primary and backup communications (external and internal) shall be provided to permit notification of emergency conditions. The backup system shall be a different mode than the primary. Radio shall be one of the modes of communication. The communication system shall be tested daily.

23.3.3. Storage of Basic Load Quantities or Quantities Sufficient for Training and Operational Purposes at Unit Level. Category I, II, and III missiles and rockets, and all ammunition and explosives categories shall be stored in any of the following.

23.3.3.1. Arms room constructed in accordance with **MIL-HBK-1013/1A**. A modular vault meeting **Federal Specification AA-V-2737** (with a GSA Approved Class 5 Vault Door) may be used to meet this requirement.

23.3.3.2. Existing arms rooms not constructed in accordance with **MIL-HBK-1013/1A** if the facilities provide 10 minutes of forced entry time as determined locally.

23.3.3.3. GSA-approved Class 5 Weapons Storage Container.

23.3.3.4. Combat vehicles, aircraft, trailers, or in other configurations required by operational or training requirements provided constant surveillance of the items is established and maintained.

23.3.3.5. Access doors shall be either of the following.

23.3.3.5.1. GSA-Approved Class 5 Vault Doors for modular vaults that meet **Federal Specification AA-V-2737**.

23.3.3.5.2. Specified doors for arms rooms constructed IAW **MIL-HDBK 1013/1A**.

23.3.3.5.3. Solid hardwood or laminated wood of at least 1 3/4-inch thickness, with a 12-gauge steel plate on the outside face for existing facilities (providing 10-minutes of forced entry time), or standard 1 3/4-inch thick, hollow metal, industrial-type construction with minimum 14-gauge skin plate thickness, internally reinforced with continuous vertical steel stiffeners spaced 6 inches on center. **NOTE:** Door bucks, frames, and keepers shall be rigidly anchored and provided with anti-spread filler reinforcement to prevent disengagement of the lock bolt by prying or jacking of the door frame. Door frames shall be designed and installed in a manner that prevents removal of the frame facing. Their construction requirements shall be as exacting as those for the doors themselves. For example, where metal doors are used, the frame and thresholds shall also be metal. Door hinges shall be located on the inside and shall be of the fixed pin security type or equivalent.

23.3.3.6. Access doors shall be secured with high security padlocks and hasps (except GSA Approved Class V Vault doors and Class 5 Weapons Storage Containers which have a built-in three position dial combination lock).

23.3.3.7. Missiles and rockets shall normally be stored in original containers, banded and sealed to reflect the integrity of the contents. Containers weighing less than 500 pounds shall be fastened to the structure (or fastened together in groups which have a total weight exceeding 500 pounds) with bolts or chains secured with padlocks meeting **CID A-A-1927**. (Locks assigned National Stock Number (NSN) 534000-158-3805, NSN 5340-00-158-3807, NSN 5340-01-408-8434, or NSN 5340-01-2699345, meet the prescribed CID). They may also be stored in GSA-Approved Class 5 Weapons Storage Containers.

23.3.3.8. Structures specified in **paragraphs 23.3.3.1, 23.3.3.2, and 23.3.3.3** storing Cat I and II material shall be protected by two levels of IDE unless continuously manned or under constant surveillance by owner/user personnel in such a manner that unauthorized access to the material can be detected. In addition to IDE, an armed guard shall check all alarmed areas daily during non-duty hours. Category III and IV storage structures/containers require one level of IDE. They also require guard checks daily during non-duty hours.

23.3.3.9. Windows and other openings shall be kept to a minimum and protected in accordance with **paragraph 23.3.2.1**.

23.3.3.10. Exterior building and door lighting shall be provided for all structures storing Category I and II material. The decision to provide lighting for Category III and IV material will be made by the ISC after taking into account the local threat. The lighting shall be of sufficient intensity to allow detection of unauthorized activity. Switches for exterior lights shall be installed in such a manner that they are accessible only to authorized individuals.

23.3.3.11. Two or more units may share the same storage facility. Where applicable, stocks shall be separated and identified by unit. One unit shall be designated as responsible for the security of the entire facility.

23.3.3.12. Owner/users shall strictly control pedestrian entry into and exit from unit level storage areas. A system of random inspections of personnel entering or exiting the areas shall be established. Entry records shall be maintained for a minimum of 90 days. Privately owned vehicles shall not be permitted in close proximity to unit storage areas.

23.3.4. Protection of Category II, III, and IV Arms. These items (to include firearms stored in rod and gun club facilities) shall be stored in the same manner as prescribed for Category I through III missiles and rockets (and all categories of ammunition and explosives) as outlined in **paragraphs 23.3.2 and 23.3.3** as appropriate, except as noted below.

23.3.4.1. The following exceptions are authorized. Perimeter fencing is not required.

23.3.4.1.1. Within the structures prescribed in **paragraph 23.3.3**, arms stored at the unit level shall be secured in standard issue or locally fabricated arms racks. The racks must be constructed to prevent easy removal. Such racks shall be secured with padlocks meeting **CID A-A-1927**, see **paragraph 6.3.12**. Bolts used to secure racks must be spot welded, peened, or otherwise secured to prevent easy removal. Chains used to secure racks shall be heavy duty hardened steel or welded, straight link, galvanized steel, 5/16-inch thick, or equivalent. An example of an equivalent chain is Type 1, Grade C, Class 4, NSN 4010-00-149-5583, NSN 4010-00-149-5575, or NSN 4010-00-171-4427. Hinged locking bars for racks shall have the hinges welded, peened, or otherwise secured to prevent easy removal.

23.3.4.1.2. Unless continuously manned by armed personnel or under constant surveillance in such a manner that unauthorized entry into and around arms storage structures can be detected, all Category II, III, and IV arms storage structures shall be protected by two levels of IDE.

23.3.4.1.3. Continuously manned storage rooms must be equipped with duress alarm capability. **NOTE:** 29 or fewer Category IV weapons and associated ammunition may be stored in a GSA approved Class 5 storage container without IDE.

23.3.4.2. Major parts for arms (such as barrels and major subassemblies), as well as arms frames and receivers, shall be afforded the same protection as complete Category II, III, or IV arms.

23.3.5. Key and Lock Control. AA&E facility supervisors must establish procedures for controlling keys to all locked structures, gates, and containers and publish those procedures in a unit operating instruction. Master key systems may be

used for weapons racks located inside an approved AA&E storage facility. A master key system for AA&E facilities themselves is prohibited. Operating instructions will address and/or include the following.

23.3.5.1. Semiannual inventories of keys and locks are required.

23.3.5.2. Keys to AA&E storage buildings, rooms, racks, containers, and IDS will be maintained separately from other keys and accessible to those individuals whose official duties require access to them. A current roster or letter of these individuals will be kept in the unit or organization. Protect the letter or roster from public view.

23.3.5.3. Keys to AA&E storage buildings, rooms, racks, and containers will not be left unsecured or unattended.

23.3.5.4. Installation commanders or their designee shall appoint in writing the key and lock custodian.

23.3.5.5. When not attended or used, keys providing access to Category II and IV can be stored in a 20-gauge steel box or material equivalent strength, and equipped with a GSA approved built-in changeable combination lock. Keys providing access to Category I and II AA&E shall be security with a class 5 GSA approved security container.

23.3.5.6. Accountability of Keys. Accountability records shall contain the signature of the individual receiving the key, date and hour of issuance, serial number or other identifying information of the key, signature of individual issuing the key, as well as the same information when the key is returned. **AF Form 2432, Key Issue Log**, a computer generated product, or the SF Blotter may be used to record this information. Completed forms are disposed of IAW **AFMAN 37-139, Records Disposition Schedule**.

23.3.5.7. Locks shall be locked or staple or hasp when the area container is opened to prevent theft, loss, or substitution of the lock.

23.3.5.8. When individuals, such as duty officers, are charged with the responsibility of having keys immediately available, they shall sign for a sealed container of keys. When the sealed container of keys is transferred from one individual to another, the unbroken seal is evidence that keys have not been disturbed.

23.3.5.9. In the event of lost, misplaced, or stolen keys, the affected locks or cores shall be replaced immediately.

ATTACHMENT NO. 9

CHAPTER 12 ODDG – ELECTRICAL PARAGRAPHS 9.2.5 THRU 9.2.5.9)

9.2.5 Transformers - Design Procedures.

Dry type transformers are less tolerant of overloads and phase imbalances than oil-filled transformers, therefore sizing procedures are not interchangeable. If the facility has a large quantity of nonlinear loads, the harmonics generated could affect the service transformer. The potential impact should be evaluated and the sizing procedures adjusted to the extent necessary to compensate.

See paragraph "Transformer Configurations". Note that standard dry type transformer generally carry lower BIL ratings than oil-filled transformers. Equivalent ratings are available as additional cost options from most suppliers.

9.2.5.1 Transformer Sizing - Oil Insulated.

For oil immersed, self-cooled, "exposed to the weather" applications, the kVA (kilovolt-ampere) rating of transformers may be computed conservatively using 100 percent of the calculated, diversified Estimated Maximum Demand (EMD) or more economically by allowing temporary overloading per the method of the following subparagraphs. The conservative approach should be followed for applications involving 40 degree C or over ambient, peak loads lasting more than 8 hours, existing facilities where accurate load data can't be obtained or is of questionable accuracy, or new facilities where future loading can't be predicted with confidence. The economical approach incorporating short-term overload is preferred where design life of the facility is under 15 years. The more economical sizing approach could also be used if temperature monitoring and relaying is specified to either shut down the transformer, activate alarms, or energize forced air cooling whenever loading exceeds tolerable levels.

9.2.5.2 Single Building Transformers.

Use the building EMD computed as directed in the "Interior" portion of these instructions.

9.2.5.3 Transformer Serving More than One Building.

Compute a group EMD by applying a diversity factor from Attachment 12-12.

9.2.5.4 Temperature Correction Factor

Temperature correction factor shall be derived by estimating the time of year when the load will be the largest (the warmest or coldest month). Select the percent of correction factor for appropriate geographic location from Attachment 12-3.

9.2.5.5 Overload Factor.

Overload factor of 1.24 may be used (assuming maximum duration of 2 hours per 24 hour period).

9.2.5.6 Power Factor.

Power factor shall be a reasonable estimate.

9.2.5.7 Equation.

Equation shall be:

$$\text{kVA} = \frac{\text{kW}}{\text{TF} \times \text{OF} \times \text{PF}}$$

$$\text{kVA} = \frac{\text{kW}}{\text{TF} \times \text{OF} \times \text{PF}}$$

kVA = Minimum Transformer Capacity

kW = Estimated Maximum Demand (EMD) in kilowatts

TF = Temperature Correction Factor (i.e., + 30% =

1.30; -10% = .90).

(See Attachment 12-3 to this chapter).

OF = Short Time Overload Factor 1.24

(oil filled units only)

PF = Power Factor

9.2.5.8 Kilo-volt-ampere Rating (kVA)

KVA of the transformer selected shall be the standard commercial size, equal to or greater than the computed size.

9.2.5.9 Transformer Sizing - Dry Type.

It is preferred that dry type distribution transformers be sized for 80 to 100 percent maximum loading. (See "LOW VOLTAGE DISTRIBUTION" section for instructions pertaining to sizing of low voltage general purpose transformers.) A short term (2 hours maximum) overload factor of 1.10 could be used if the load is evenly balanced between phases and harmonic content in the neutral does not exceed 10 percent of rated line

current. The less stringent table 8-2 of AFJMAN 32-1080 should not be used without prior approval.

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ATTACHMENT NO. 10

**ENGINEERING TECHNICAL LETTER (ETL) 94-2,
UTILITY METERS IN NEW AND RENOVATED
FACILITIES**

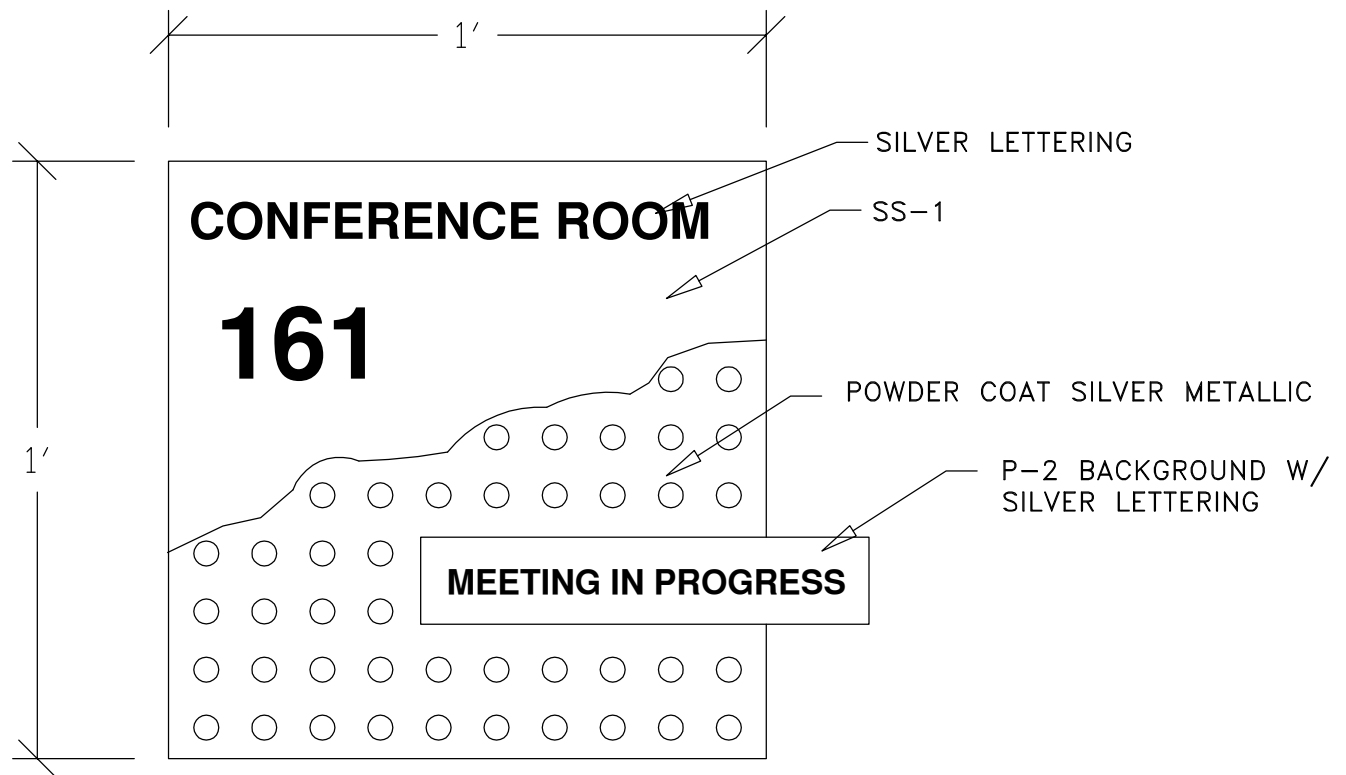
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FOLDER ON SOLICITATION CD-ROM. REQUIRES
ADOBE ACROBAT 5.0 TO READ.**

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ATTACHMENT NO. 11

INTERIOR SIGNAGE DETAILS

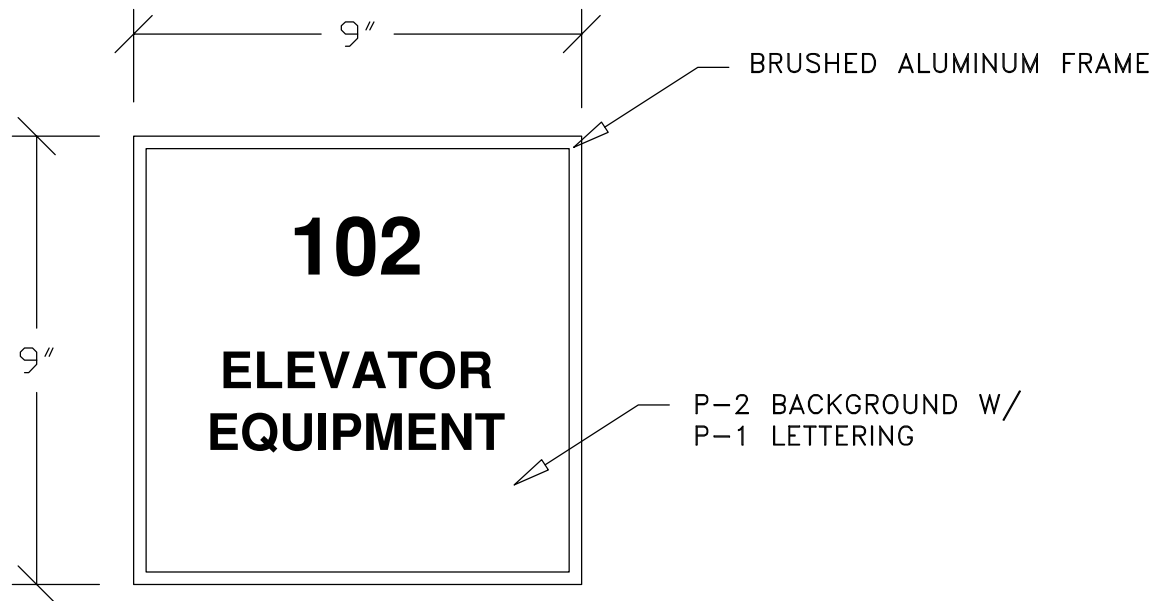
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SIGNAGE STYLE 1 ASI INFINITY SIGNAGE

TO BE USED FOR ALL OFFICES ON
CORRIDORS, MEETING, CONFERENCE,
TRAINING, AND DEBRIEFING ROOMS

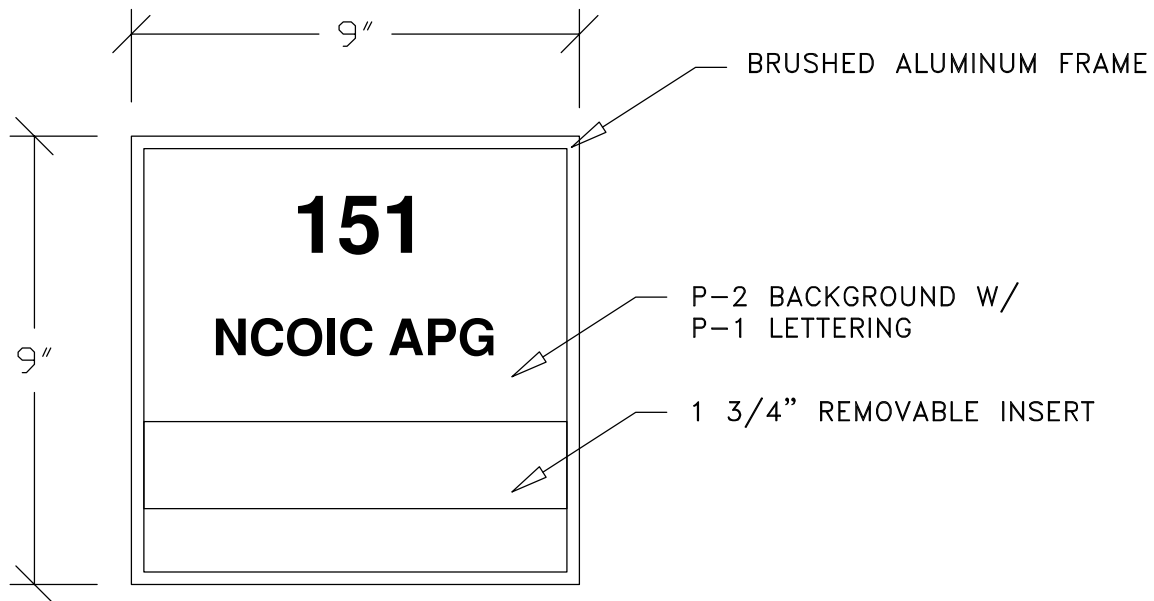
MANUFACTURER:
ASI-MODULEX
6958 NO 97TH CIRCLE
OMAHA, NE 68122
402-572-5055
GSA CONTRACT#: GS07F-9699G



SIGNAGE STYLE 2
ASI SERIES 20 SIGNAGE

TO BE USED FOR ALL JANITOR CLOSETS,
RESTROOMS, UTILITY, COMM, AND
MECHANICAL ROOMS

MANUFACTURER:
ASI-MODULEX
6958 NO 97TH CIRCLE
OMAHA, NE 68122
402-572-5055
GSA CONTRACT#: GS07F-9699G



SIGNAGE STYLE 3
ASI SERIES 20 SIGNAGE

TO BE USED FOR ALL
PRIVATE OFFICES

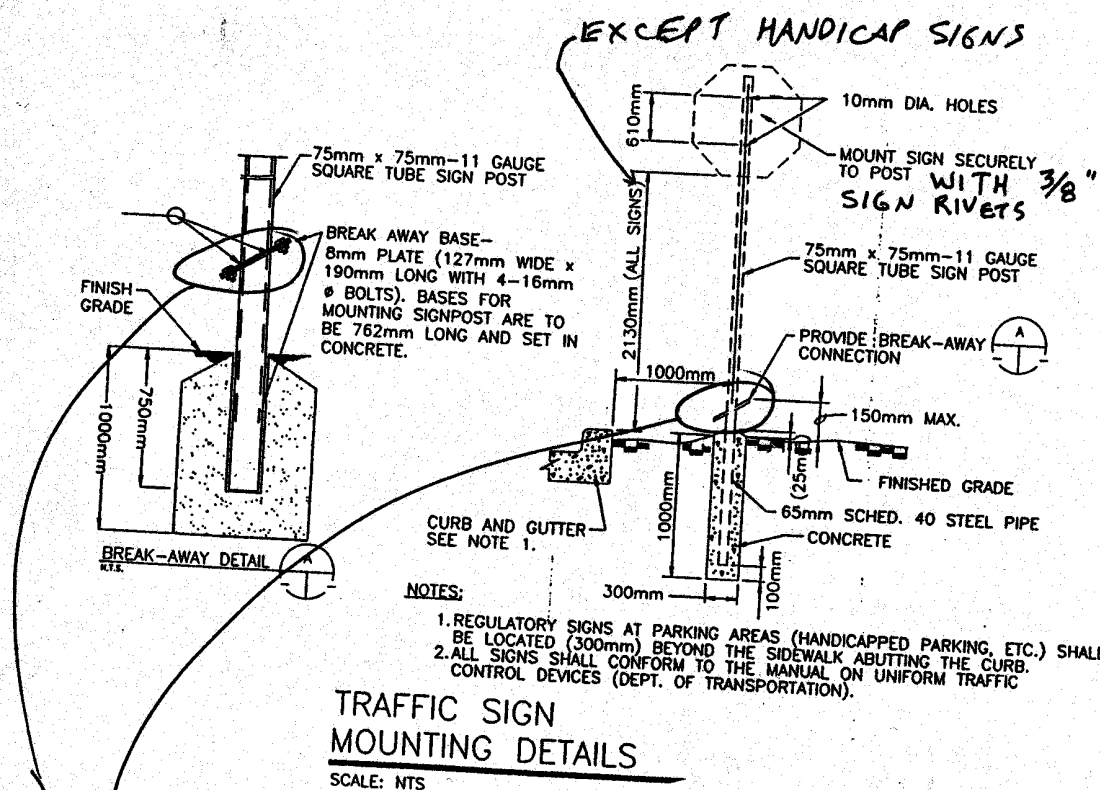
MANUFACTURER:
ASI-MODULEX
6958 NO 97TH CIRCLE
OMAHA, NE 68122
402-572-5055
GSA CONTRACT#: GS07F-9699G

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ATTACHMENT NO. 12

EXTERIOR SIGN DETAILS

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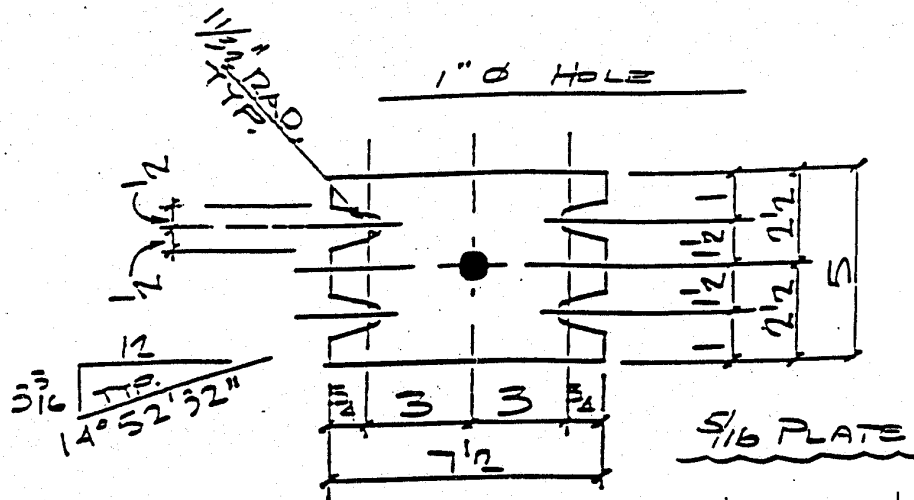
BREAK AWAY BASE SHOULD BE HORIZONTAL, NOT DIAGONAL.

SEE BASE PLATE DETAIL (ATTACHED).

- SIGN POSTS TO BE PAINTED "DIAMOND VOGEL GB CHOCOLATE BROWN" OR EQUAL

SIGNS: BACK SIDE - BROWN BACKING, ENGINEER GRADE
FRONT SIDE - HIGH INTENSITY

HANDICAP SIGN MOUNTING HEIGHT IS 4' TO TOP OF SIGN



20 - BASE PLATES

A31119

20 - 12 5/16 x 5 x 0-7 1/2

DATE DRWN 9-5-01	CONTRACTOR ELLSWORTH AFB	DR. BY BILL
DATE REQ'D 9-7-01	JOB NAME	PAINT NO
HOW SHIP OURTRK	LOCATION BLDG # 7612	SHT 1 OF 1
REMARKS QUOTED	ROD MARTENS	JOB NO. 31119

REF: 9831522 385-4714

**BY ORDER OF THE COMMANDER
ELLSWORTH AFB**



ACC INSTRUCTION 32-1054

**ELLSWORTH AFB
Supplement 1**

1 APRIL 2003

Civil Engineering

EXTERIOR SIGNS

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

NOTICE: This publication is available digitally on the Ellsworth Electronic Publishing Library at <https://wwwmil/ets/index.html>

OPR: 28 CES/CEOH
(Mr. Richard H. Grueschow)
Supersedes ACCI32-1054
Ellsworth AFB Sup 1, 3 February 2003

Certified by: 28 CES/CEO
(Capt Dan M. Mumm)
Pages: 4
Distribution: F

ACCI 32-1054, 15 November 1996, is supplemented as follows: This supplement applies to all organizations assigned or supported by the 28 BW. It contains guidance for the design, construction, and placement of exterior signs on Ellsworth AFB. The intent is to establish signs that are professional in appearance, properly located, and uniform throughout the base. Send comments or suggested changes to this supplement on AF Form 847, **Recommendation for Change of Publication**, through channels, to 28 CES/CEO, 2103 Scott Dr, Ellsworth AFB SD 57706.

SUMMARY OF REVISIONS

Defined routine approval authority for signs (paragraph 1.1).

1. Ellsworth AFB policy is to minimize the number of signs and eliminate nonessential signs. As a general rule, organizational signs are not allowed except for facilities especially identified in this instruction.

◆ 1.1. (Added) All requests for signs or sign installations will be submitted to the 28 CES Customer Service Office on an AF Form 332, **Base Civil Engineer Work Request**. All requests must contain a clear description of the requested sign by type, message, and location. Routine approval authority for signs has been delegated to 28th CES Chief, Heavy Repair. Further approval for signs depends on the type as outlined in this instruction. The overall authority for Ellsworth AFB signs is the Commander, 28th Bomb Wing. The 28th Civil Engineer Squadron has the authority to remove all signs not in accordance with this instruction.

1.2. (Added) Ellsworth AFB policy is to use brown background with white letters for all signs, with exceptions of building identification lettering and traffic control signs.

2.1. Signposts will be nonperforated and will be vertical and properly installed in the ground or pavement. Signposts, frames, and backs of signs will be brown. Signposts to be installed will be 3x3-inch, 11-gauge square tubing. Brake away bases will be a 5/16 plate, 5 inches wide by 7.5 inches long, with specifications for 5/8 diameter bolts. Bases for mounting signpost are to be 30 inches long and will be set in concrete.

3. Abbreviations of any type are to be minimized. However, if they are used, they will conform to standard Air Force abbreviations. Signs will conform to this instruction and AFPAM 32-1097, *Sign Standards*, in regard to message, format, size, typeface, and location. All facility construction and exterior renovation or addition projects will include required signs. Homemade signs are not authorized on Ellsworth AFB. Stencils and use of spray can paints for signs is not professional and will not be allowed.

6. Signs at base entry gates are to be minimized.

7. Marquee signs are authorized at base operations, base entry gates, MWR activities, and the BX/Commissary community area only. Other marquee signs and mobile signs with changeable letters are not authorized unless approved by the Commander, 28th Mission Support Group.

8.1. All traffic control signs such as speed limit, stop, and yield must conform to the *Manual on Uniform Traffic Control Devices* published by the Federal Highway Administration. Any deviation from commonly accepted standards for highway safety signs could create serious safety hazards. As a result, highway warnings and other regulatory signs and traffic control devices must follow the national standards. The Commander, 28th Security Forces Squadron, is the approving official for traffic control signs.

8.2. Directional signs should display only those places frequently used by off-base visitors. As a minimum, the following facilities will be identified on directional signs: hospital, billeting office (Pine Tree Inn), housing office, collocated club, community center, main exchange, commissary. Facilities generally used only by the base population such as the library, bowling alley, gym, and bank should not be identified on directional signs. Directional signs will have no more than four entries displayed. Directional signs will not be placed near any other signs unless absolutely necessary. This is to prevent driver confusion in congested areas. The directional signs will be of the D-2 design (AFPAM 32-1097) except that color shall be white letters on brown background and brown posts. Dark brown, anodized aluminum signs are preferred. No more than two signs facing the same direction will be installed on one pole. The Commander, 28th Mission Support Group, is the approving official for base directional signs.

8.4. (Added) Curbs will not be painted solid yellow, red, white, or any other color.

9. Signs identifying facility function or name (building identification signs) will be wall mounted signs consisting of individual dimensional letters applied directly to the surface of the wall. Names of individuals will not be included on exterior signs. Buildings may be identified by either the function or by the name of the facility. Some examples of facilities that should have building identification signs are dormitories, billeting, comptroller (military pay), military personnel flight, civilian personnel office, fitness center, housing office, and the family support center. The purpose of these signs is to aid in locating facilities. Not all buildings need identification signs. Buildings frequented only by the facility occupants and not by the base populace such as squadron orderly rooms, general administration offices, maintenance shops, shop areas, pump houses, and utility structures should not have building identification signs.

These facilities are best identified by their appropriate street addresses. The Commander, 28th Mission Support Group, is the sole approving official for building identification signs. Building identification signs will be strictly limited to one per building except where customer service functions such as MPF and TMO are located in which case the customer service function may also be displayed. Freestanding signs identifying facility function, occupant, or services are not authorized. The preferred sign style is wall mounted dimensional letters applied directly to the surface of the wall (AFPAM 32-1097). To be compatible with the architectural treatment of the exterior, these signs will be in the Helvetica style in either satin finish aluminum letters or dark brown baked enamel over aluminum letters. In general, light colored buildings will receive the dark brown baked enamel over aluminum letters and dark colored buildings will receive the satin finish aluminum letters. Lighted signs are authorized on buildings used predominately by newly arriving personnel and/or visitors to the base after the hours of darkness such as temporary lodging facilities and billeting. This lighting, if used, will highlight the wall area where the dimensional lettering is located to aid newcomers or base visitors to locate these facilities after dark.

9.1. Wing headquarters buildings will be the only facilities identified by organizational title such as “28th Bomb Wing.”

9.3. ACC policy requires squadron commanders to approve the installation of signs within their facilities (ACC/CE letter dated 29 Nov 02). Interior facility signs will be installed in accordance with AFPAM 32-1097.

9.6. (Added) Street Addresses. All buildings on the base will be identified with street addresses. Also, all buildings subdivided into suites of rooms will have the suite identified in the street address. The 28th CES Real Estate Management Office assigns and manages street addresses.

9.6.1. (Added) Main entry glass doors facing main thoroughfare will have the street address number displayed using 4-inch pressure sensitive white plastic numerals.

9.6.2. (Added) Main entry solid doors facing main thoroughfare will have the street address numbers displayed on the outside using four-inch pressure sensitive white plastic numerals.

9.6.3. (Added) For buildings with more than one entry door facing the main thoroughfare and the building is not divided into suites; only the door used primarily by visitors or main door will have the numerals affixed.

9.6.4. (Added) For buildings where the main entry door does not face the main thoroughfare, the street address will be placed on the building side facing the main thoroughfare closest to the main entry doors using wall mounted dimensional letters. It will have the street name spelled out below the numerals in smaller letters. The sizes of dimensional numerals and letters used in street addresses will depend on the distance to the street, and as a general rule, increase one inch for every 25 feet in distance to the roadway. The colors will be the same as for building identification signs.

9.6.5. (Added) For buildings with more than one entry door and the building is divided into suites, each door will have the street address affixed and the word “suite” and its suite number below the street address in three-inch white letters.

9.7. (Added) Signs stating operating hours and other customer information, if required on the exterior either on or near the front entrance, will be displayed in an unobtrusive fashion. A sign, plaque, or lettering will be neat and concise and be either white plastic pressure sensitive letters

or a commercially available sign or plaque.

9.8. (Added) Multiple occupancy: If more than one unit occupies a building, then the building will be identified as related to the major occupant “unless building is occupied by 0-6 then he or she is major occupant or a non-unit connected name is agreed upon and approved. Major occupant is defined as the unit occupying the most square footage in the building. Secondary occupants may be identified at secondary building entrances that are used as the secondary occupant’s main entrance by white pressure sensitive lettering on secondary glass doors or an 18x18 inch brown background with white letters sign placed by a solid core secondary door. A sign or lettering for a secondary occupant will not be placed on or next to the main building entrance; instead an interior sign may be used inside the main building entrance.

11.1. (Added) Reserved parking signs will be limited and will only be used when absolutely necessary. When used, reserved parking stalls will be identified by the standard sign panel (type E-4, AFPAM 32-1097). Reserved parking is allowed for wing commanders, wing vice commanders, group commanders, deputy group commanders, squadron commanders, deputy squadron commanders, squadron first sergeants, CMSgts, and their civilian counterparts. This reserved parking is only for the parking area adjacent to their office. Examples of reserved parking are, 28 BW/CC, 28 MSG/CC, 28 MXG/CC, 28 CES/CC, 28 LRS/CCF, and 28 CES/CEM. The Commander, 28th Mission Support Group is the approving authority for all reserved parking signs.

11.1.1. (Added) Each facility will be allowed to have movable general officer or distinguished visitor signs either on a stanchion or placard and frame arrangement. This is to allow the temporary reservation of parking slots for visitors.

11.1.2. (Added) Each facility will be allowed as many handicapped slots as deemed necessary by customer usage and approved by the 28th Mission Support Group Commander. The handicapped slots will be located next to existing wheelchair ramps or nearest the main entry.

11.1.3. (Added) Each facility will be allowed as many customer slots as deemed necessary by the organization’s commander and approved by the 28th Mission Support Group Commander. Customer reserved parking signs will be placed as close as practical to the appropriate building entrance.

11.2. (Added) Signs on fences and gates will be kept to an absolute minimum to reduce cluttering. Spacing of required signs will be the maximum allowed by the directive requiring the signs.

11.3 (Added) Air Force bases may have signs to motivate. These signs will be of the F1, F2 and F3 type (AFPAM 32-1097). The base civil engineer is responsible for controlling quality, content and placement of motivation signs.

DARREN P. GIBBS, Major, USAF
Commander, 28th Civil Engineer Squadron

ATTACHMENT NO. 13

**HAZARDOUS MATERIALS SURVEY REPORT
(9 APR. 2003)**

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HAZARDOUS MATERIALS SURVEY REPORT

for

Asbestos Containing Materials, PCBs, and Fluorescent Light Tubes

PREPARED FOR:

Kenneth J. Hahn Architects
1343 South 75th Street
Omaha, Nebraska 68124

PROJECT LOCATION:

Ellsworth Air Force Base
Buildings 7221, 7226, 7238 and 7503
Rapid City, South Dakota

Project Date(s): March 24, 2003

Report Date: April 9, 2003

ATC Project ID: 07.24362.0003

ATC Associates Inc.
3712 South 132nd Street
Omaha, NE 68144

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APPENDIX B	SCHEMATICS
APPENDIX C	INSPECTOR ACCREDITATIONS



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April 9, 2003

Mr. Ken Hahn
Kenneth J. Hahn Architects
1343 South 75th Street
Omaha, Nebraska 68124

Re: Hazardous Materials Survey Report
Ellsworth Air Force Base
Buildings 7221, 7226, 7238 and 7503
Rapid City, South Dakota
ATC Project Number: 07.24362.0003

ATC Associates Inc. (ATC) is pleased to submit the attached Hazardous Materials Survey Report conducted at the above-referenced site. This report includes procedures, methodologies and analytical laboratory results.

ATC appreciates the opportunity to perform these services for Kenneth J. Hahn Architects, and we look forward to working with you in the future. If you need any assistance with the implementation of the recommendations contained in this report, please feel free to give me a call at (402) 697-9747 and ATC will respond promptly to your needs.

Sincerely,

ATC ASSOCIATES INC.

A handwritten signature in black ink, appearing to read 'Paul Virgillito', written over a horizontal line.

Paul Virgillito
Operations Manager

A handwritten signature in black ink, appearing to read 'Bob Arritt', written over a horizontal line.

Bob Arritt
Director - Asbestos and Lead

HAZARDOUS MATERIALS SURVEY REPORT

Ellsworth Air Force Base
Buildings 7221, 7226, 7238 and 7503
Rapid City, South Dakota
ATC Project Number: 07.24362.0003

1.0 SCOPE OF SERVICES

The purpose of this project was to perform a Hazardous Materials Survey Report to include asbestos, PCBs, and fluorescent light tubes at the above referenced property. ATC was unable to gain access to rooms 39 through 44 and rooms 78 and 80 in Building 7503, due to security purposes, therefore, these rooms were not included as part of the inspection.

ATC provided a representative asbestos survey at the identified building in accordance with the referenced agreement and as outlined below:

1. Review any existing asbestos reports relating to the site, if available.
2. Survey the site building(s).
3. Identify accessible suspect asbestos containing materials (ACM) in accordance with the USEPA National Emission Standard for Hazardous Air Pollutants (NESHAP), (ref.: 40 CFR, Part 61).
4. Collect and analyze bulk samples of suspect materials.
5. Quantify any asbestos containing materials and record location.

2.0 GENERAL SITE CONDITIONS

The survey was conducted at Ellsworth Air Force Base located in Rapid City, South Dakota. The property contained four (4) structures. Buildings 7221 and 7226 were constructed of metal, and were unoccupied at the time of inspection. Building 7238 is a concrete block building with a pitch and gravel roof and the interior walls are transite. Building 7503 is constructed of concrete, the exterior walls are stucco, and the roof is metal. Buildings 7238 and 7503 were both occupied at the time of inspection.

3.0 ASBESTOS SURVEY REPORT

On March 24, 2003, the site located at Ellsworth Air Force Base in Rapid City, South Dakota was inspected for asbestos containing building materials by inspector Vince Brandts of ATC Associates Inc. Mr. Brandts has completed the requisite training for asbestos accreditation as an inspector at a state approved

training provider under TSCA Title II. Mr. Brandts' State of South Dakota Inspector number is 2390R.

The site was visually inspected for the presence of suspect asbestos containing materials (ACM). Materials that were hidden, not accessible, or when sampled would damage the integrity of the structure, were not sampled as part of this survey. Materials visibly identified as non-asbestos (fibrous glass, foam rubber, wood, etc.) were not sampled. The asbestos survey consisted of three basic steps: **1)** a visual inspection of the proposed site; **2)** a determination of homogeneous areas with suspect surfacing, thermal system insulation, and miscellaneous materials; and **3)** sampling accessible, friable and non-friable, suspect materials.

3.1 Homogeneous Areas

Prior to sampling, homogeneous areas were identified in order to facilitate a sampling strategy. A homogeneous sampling area can be described as one or more areas with suspect material similar in appearance and texture that have the same installation date and function. The actual number of samples collected from each homogeneous sampling area may vary, dependant upon material type and the professional judgment of the inspector.

3.2 Sampling Strategy

The sampling strategy incorporated AHERA requirements, quantities of suspect material, and the inspector's judgment to aid in the identification of suspect asbestos containing materials. ATC's sampling strategy was to identify and collect accessible suspect asbestos containing materials (ACM) in accordance with the USEPA National Emission Standard for Hazardous Air Pollutants (NESHAP), (ref.: 40 CFR, Part 61). If the analytical results indicated that all the samples collected per homogeneous area did not contain asbestos, then the homogeneous area (material) was considered non-asbestos containing. However, if the analytical results of one or more of the samples collected per homogeneous area indicated that asbestos was present in quantities greater than one percent asbestos (as defined by EPA), all of the homogeneous area (material) was treated as an asbestos containing material regardless of any other analytical results. Materials which were visually determined to be non-asbestos (i.e. fibrous glass, foam rubber, etc.) by the accredited inspector were not required to be sampled. Actual collection of a bulk asbestos sample involves physically removing approximately one square inch (1 in²) of material and placing it in an airtight sample container. Sample containers were marked with a unique identification number, which was documented in the field notes.

3.3 Suspect Asbestos-Containing Materials

The following tables contain a list of twenty-four (24) sampled accessible building materials suspected of containing asbestos in Buildings 7221, 7226, 7238 and 7503:

TABLE 1: BUILDING 7221 SUSPECT BUILDING MATERIALS		
MATERIAL	LOCATION	SAMPLE NUMBER
No Suspect Asbestos Containing Building Materials	N/A	N/A

TABLE 2: BUILDING 7226 SUSPECT BUILDING MATERIALS		
MATERIAL	LOCATION	SAMPLE NUMBER
No Suspect Asbestos Containing Building Materials	N/A	N/A

TABLE 3: BUILDING 7238 BUILDING SUSPECT BUILDING MATERIALS		
MATERIAL	LOCATION	SAMPLE NUMBER
Gray Transite Siding	Exterior walls	1, 2,3
Gray/White Sheetrock and Joint Compound	Throughout Building	4,5,6
Tan Window Caulk	Exterior, North window	7
Tan Expansion Caulk	Exterior, East Side	8

TABLE 4: BUILDING 7503 SUSPECT BUILDING MATERIALS		
MATERIAL	LOCATION	SAMPLE NUMBER
Boiler Insulation	Boiler Room	1, 2,3
Header Insulation	Boiler Room	4,5,6
Flue Insulation	Boiler Room	7,8,9
Cementitious Insulation	Large Penthouse at AHU access door	10,11,12
Gray Hard Packed Pipe Fittings Insulation	Throughout Building	13,14,15, 16
Gray Aircell Pipe Insulation	Throughout Building	17,18,19
White Mag Block Pipe Insulation	Throughout Building	20,21,22
Black Pipe Wrap Insulation	Men's Locker Room	23

TABLE 4: BUILDING 7503 SUSPECT BUILDING MATERIALS		
MATERIAL	LOCATION	SAMPLE NUMBER
Brown/Gray Millboard Pipe Insulation	Throughout Building	24,25,26
White Ceiling and Wall Texture	Room 16	27,28,29
Sheetrock and Joint Compound	Throughout Building	30,31,32
2' x 4' White Ceiling Tile	Room 23	33,34,35
12" x 12" White Ceiling Tile	Room 24A	36,37,38
2' x 2' White Ceiling Tile	Rooms 10B, 28, and 51	39,40,41
12" x 12" Cream/Black Floor Tile and Mastic	Room 23, at door to Room 21	42
12" x 12" Gray Floor Tile and Mastic	Northeast Entryway	43
12" x 12" Green Floor Tile and Mastic	Room 21, at door to Room 23 under carpet	44
12" x 12" Cream/Rust Floor Tile and Mastic	Room 16, at door to Room 14 under carpet	45
12" x 12" Light Green/Green Floor Tile and Mastic	Hall 75A, at door to Room 33 under carpet	46
Brown Carpet Mastic	Room 23, at door to Room 21	47

The following tables are a summary of the suspect asbestos containing materials that have been determined, through laboratory analysis, to contain asbestos:

TABLE 5: BUILDING 7221 ASBESTOS CONTAINING MATERIALS				
MATERIAL	LOCATION	SAMPLE NUMBER	APPROX. QUANTITY	ASBESTOS CONTENT
No Suspect Asbestos Containing Materials	N/A	N/A	N/A	N/A
sf = Square Feet, ND = Non Detect, NA = Not Applicable, lf = Linear Feet, mf = Mechanical Fittings				

TABLE 6: BUILDING 7226 ASBESTOS CONTAINING MATERIALS				
MATERIAL	LOCATION	SAMPLE NUMBER	APPROX. QUANTITY	ASBESTOS CONTENT
No Suspect Asbestos Containing Materials	N/A	N/A	N/A	N/A
sf = Square Feet, ND = Non Detect, NA = Not Applicable, lf = Linear Feet, mf = Mechanical Fittings				

TABLE 7: BUILDING 7238 ASBESTOS CONTAINING MATERIALS				
MATERIAL	LOCATION	SAMPLE NUMBER	APPROX. QUANTITY	ASBESTOS CONTENT
Gray Transite Siding	Exterior walls	1, 2,3	2,304 sf	18%
sf = Square Feet, ND = Non Detect, NA = Not Applicable, lf = Linear Feet, mf = Mechanical Fittings				

TABLE 8: BUILDING 7503 ASBESTOS CONTAINING MATERIALS				
MATERIAL	LOCATION	SAMPLE NUMBER	APPROX. QUANTITY	ASBESTOS CONTENT
Boiler Insulation	Boiler Room	1, 2,3	290 sf	5%
Header Insulation	Boiler Room	4,5,6	42 sf	25%
Gray Hard Packed Pipe Fittings Insulation	Throughout Building	13,14,15, 16	310 mf	8%
Gray Aircell Pipe Insulation	Throughout Building	17,18,19	330 lf	15%
White Mag Block Pipe Insulation	Throughout Building	20,21,22	235 lf	30%
12" x 12" Cream/Black Floor Tile Mastic	Room 23, at door to Room 21	42	886 sf	3%
12" x 12" Light Green/Green Floor Tile	Hall 75A, at door to Room 33 under carpet	46	4,371 sf	3%
sf = Square Feet, ND = Non Detect, NA = Not Applicable, lf = Linear Feet, mf = Mechanical Fittings				

3.4 Laboratory Analytical Results

Bulk samples were analyzed by ATC's Omaha, Nebraska laboratory. Polarized Light Microscope analysis, utilizing dispersion staining techniques (ref.: EPA Method 600/M4-82-020), was performed to determine the asbestos content of the bulk samples collected at the site. This laboratory is currently a proficient

participant in the American Industrial Hygiene Association (AIHA) Bulk Asbestos Proficiency Analytical Testing Program; a quality assurance program for polarized light microscopy analysis. Any material that contains greater than one percent asbestos is considered an ACM and must be handled according to Occupational Safety and Health Administration (OSHA), EPA, and all applicable state and local regulations.

Details of sample analysis are included in Appendix A, which contains a listing of all analyzed samples, sample locations, and analytical results relating to the site. Asbestos analytical results are reported as percentage and type. Other common non-asbestos components may also be noted in the analytical report.

4.0 PCB BALLASTS/FLUORESCENT LIGHT TUBES

Light fixtures were surveyed for potential PCB-containing ballasts in Building 7503 by visually inspecting a minimum of four of each type of fixture present. Each fixture was dismantled and inspected for the words "Non PCBs". The number of ballasts per fixture was also noted. If it was determined that the fixture originally housed PCB-containing ballasts, it was assumed that all ballasts associated with this fixture type still house PCB-containing ballasts. The number of fixtures and associated light tubes were also tallied in each building.

4.1 Findings

ATC personnel identified four hundred and sixty-two (462) fixtures at the drop ceiling level and forty-five (45) fixtures above the drop ceiling. Thirty-eight (38) of the fixtures inspected may have ballasts which contain PCBs. The fixtures contain one thousand and seventy-eight (1,078) fluorescent tubes.

4.2 Conclusions

PCB containing ballasts were identified in Building 7503.

4.3 Recommendations

The PCB-containing ballasts and fluorescent light tubes identified during this inspection will require special handling and disposal during the demolition projects. Federal regulations applicable to PCBs are found in Title 40 CFR, Part 761. The equivalent state regulations are found in South Dakota Codified Law 34A-11, Administrative Rules of South Dakota 74:28:31. Specific storage requirements for PCBs are found in 40 CFR 761.65. The disposal requirements for fluorescent lights ballasts (FLBs) containing PCBs only in an intact and non-leaking PCB Small Capacitor are found in 40 CFR 761.60 (b) (2) (ii). FLBs

containing PCBs at a concentration greater than 50 parts per million in the potting material are regulated for disposal as PCB bulk waste under 40 CFR 761.62. Because one cannot determine if the PCBs in a ballast derive from either the potting material and/or the small capacitor without disassembling the ballast and testing each, EPA recommends that FLBs that do not exhibit the "Non PCB" mark be managed as PCB bulk product waste, if such testing is not conducted. FLBs containing PCBs only in a small capacitor that is no longer intact or non-leaking must be managed for disposal as PCB bulk product waste under the requirements of 40 CFR 761.62 (a) or (c)

Federal management requirements for fluorescent light tubes containing mercury are codified in Title 40 CFR, Part 273. The equivalent state regulations are found in South Dakota Codified Law 34A-11, Administrative Rules of South Dakota 74:28:33. These light tubes are identified under the regulations as "universal waste lamps". Specific sections of 40 CFR Part 273 define the requirements for accumulation, storage, handling, transportation, and disposition of universal waste lamps.

The design specifications should require coordination with Ellsworth Air Force Base environmental contacts for the disposition of PCB and non-PCB fluorescent light ballasts and universal waste lamps.

5.0 ASSUMPTIONS AND LIMITATIONS

The results, findings, conclusions, and recommendations expressed in this report are based solely on conditions noted during the March 24, 2003, ATC inspection of the site located in Rapid City, South Dakota.

ATC did not perform destructive sampling -- it was not within ATC's scope of work to remove surface materials to investigate portions of the structure or materials that may lay beneath the surface -- thus, any materials that could not be visually identified on the surface were not inspected and would not be noted in this report. ATC's selection of sample locations and frequency of sampling was based on the inspector's assumption that like materials in the same area are homogeneous in content.

The report is designed to aid the building owner, architect, construction manager, general contractor, and potential asbestos abatement contractor in locating ACM. Under no circumstances is the report to be utilized as a bidding document or as a project specification document since it does not have all the components required to serve as an Asbestos Project Design document or an Abatement Workplan.

Our professional services have been performed, our findings obtained, and our conclusions and recommendations prepared in accordance with customary principles and practices in the fields of environmental science and engineering. This statement is in lieu of other statements either expressed or implied. This report does not warrant against future operations or conditions, nor does it warrant against operations or conditions present of a type or at a location not investigated.

This report is intended for the sole use of Kenneth J. Hahn Architects, on behalf of Mr. Ken Hahn. The scope of services performed in execution of this evaluation may not be appropriate to satisfy the needs of other users, and use or re-use of this document or the findings, conclusions, or recommendations is at the risk of said user.

APPENDIX A

LABORATORY ANALYTICAL REPORT



3712 South 132nd Street
Omaha, Nebraska 68144
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402.697.9747
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BULK SAMPLE ANALYSIS REPORT

Date:	April 1, 2003	Date Samples Received:	March 25, 2003
Client:	Kenneth J. Hahn Architects 1343 South 75 th Street Omaha, Nebraska	Project Location:	Ellsworth Air Force Base Building 7503 Rapid City, South Dakota
ATC Project Number:	07.24362.0003	ATC Lab Batch Number:	03-135

Lab ID	Client ID	Sample Description and Location	Layer	Asbestos Type	%	Other Fibrous Material	%	% Non-Fibrous Material
1	01	Boiler Insulation (brown) South Boiler, Center West Side		Amosite	5%	Mineral Wood	95%	
2	02	Boiler Insulation (brown) South Boiler, Center West Side		Not Analyzed				
3	03	Boiler Insulation (brown) South Boiler, Center West Side		Not Analyzed				
4	04	Header Insulation (gray) South End		Chrysotile	25%	Cellulose	50%	25% Mineral Binders
5	05	Header Insulation (gray) Center		Not Analyzed				
6	06	Header Insulation (gray) North End		Not Analyzed				
7	07	Flue Insulation (gray/white) South End		ND		Cellulose Fiberglass	10% 20%	70% Mineral Binders
8	08	Flue Insulation (gray/white) Center		ND		Cellulose Fiberglass	15% 15%	70% Mineral Binders
9	09	Flue Insulation (gray/white) North End		ND		Cellulose Fiberglass	20% 15%	65% Mineral Binders
10	10	Cementitious Insulation (gray/brown) Large Penthouse at Air Handler Unit Access Door		ND		Fiberglass Hard Packed Mineral Wood	50% 50%	



3712 South 132nd Street
Omaha, Nebraska 68144
www.atc-enviro.com
402.697.9747
Fax 402.697.9170

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ATC Project Number:	07.24362.0003	ATC Lab Batch Number:	03-135

Lab ID	Client ID	Sample Description and Location	Layer	Asbestos Type	%	Other Fibrous Material	%	% Non-Fibrous Material
11	11	Cementitious Insulation (gray/brown) Large Penthouse at Air Handler Unit Access Door		ND		Fiberglass Hard Packed Mineral Wood	60% 40%	
12	12	Cementitious Insulation (gray/brown) Large Penthouse at Air Handler Unit Access Door		ND		Fiberglass Hard Packed Mineral Wood	60% 40%	
13	13	Packed Fitting (gray) Boiler Room, by Door		Amosite	8%	Fiberglass Mineral Wood	15% 77%	
14	14	Packed Fitting (gray) Boiler Room, Top of South Boiler		Not Analyzed				
15	15	Packed Fitting (gray) Room 24A, Southeast Area		Not Analyzed				
16	16	Packed Fitting (gray) Hallway 12B, Above Door to Room 3		Not Analyzed				
17	17	Aircell TSI (gray) Hallway 12B, Above Door to Room 3		Chrysotile	15%	Cellulose	25%	60% Mineral Binders
18	18	Aircell TSI Pipe Insulation (gray) Boiler Room, South Side		Not Analyzed				
19	19	Aircell TSI Pipe Insulation (gray) Room 24A, Southeast Area		Not Analyzed				
20	20	Mag TSI Pipe Insulation (white) Small Penthouse, Southeast Corner		Chrysotile Amosite	15% 15%	Cellulose	15%	55% Mineral Binders
21	21	Mag TSI Pipe Insulation (white) Hallway 12B, Above Door to Room 3		Not Analyzed				

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BULK SAMPLE ANALYSIS REPORT

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ATC Project Number:	07.24362.0003	ATC Lab Batch Number:	03-135

Lab ID	Client ID	Sample Description and Location	Layer	Asbestos Type	%	Other Fibrous Material	%	% Non-Fibrous Material
22	22	Mag TSI Pipe Insulation (white) Room 14, Above Door		Not Analyzed				
23	23	Pipe Wrap (black) Men's Locker Room, Center North Side		ND		Cellulose	6%	94% Tar Like
24	24	Millboard TSI Pipe Insulation (brown/gray) Boiler Room, Northeast Area		ND		Cellulose	100%	
25	25	Millboard TSI Pipe Insulation (brown/gray) Hallway 12B, Above Door to Room 3		ND		Cellulose	100%	
26	26	Millboard TSI Pipe Insulation (brown/gray) Room 24A, Southeast Area		ND		Cellulose	100%	
27	27	Ceiling and Wall Texture (white) Room 16, Center East Wall		ND		Cellulose	30%	70%
28	28	Ceiling and Wall Texture (white) Room 16, Center West Wall		ND		Cellulose	25%	75%
29	29	Ceiling and Wall Texture (white) Room 16, Center West Wall		ND		Cellulose	25%	75%
30	30	Sheetrock and Joint Compound (brown/white) Room 24A, By Door		ND		Cellulose	10%	90% Mineral Binders
31	31	Sheetrock and Joint Compound (brown/white) Room 23, Center South Wall		ND		Cellulose	12%	88% Mineral Binders



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BULK SAMPLE ANALYSIS REPORT

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Client:	Kenneth J. Hahn Architects 1343 South 75 th Street Omaha, Nebraska	Project Location:	Ellsworth Air Force Base Building 7503 Rapid City, South Dakota
ATC Project Number:	07.24362.0003	ATC Lab Batch Number:	03-135

Lab ID	Client ID	Sample Description and Location	Layer	Asbestos Type	%	Other Fibrous Material	%	% Non-Fibrous Material
32	32	Sheetrock and Joint Compound (brown/white) Stairwell to Penthouse		ND		Cellulose	12%	88% Mineral Binders
33	33	2' x 4' Ceiling Tile (white) Room 23, Center		ND		Cellulose Fiberglass	98% 2%	
34	34	2' x 4' Ceiling Tile (white) Room 23, North Area		ND		Cellulose Fiberglass	97% 3%	
35	35	2' x 4' Ceiling Tile (white) Room 23, South Area		ND		Cellulose Fiberglass	98% 2%	ND
36	36	12" x 12" Ceiling Tile (white) Room 24A, Northeast Section		ND		Cellulose Glass Fibers	10% 90%	
37	37	12" x 12" Ceiling Tile (white) Room 24A, Southwest Section		ND		Cellulose Glass Fibers	12% 88%	
38	38	12" x 12" Ceiling Tile (white) Room 24A, Center		ND		Cellulose Glass Fibers	15% 85%	
39	39	2' x 2' Ceiling Tile (white) Room 51, Center		ND		Cellulose	100%	
40	40	2' x 2' Ceiling Tile (white) Locker Room 10B, Center North Side		ND		Cellulose	100%	
41	41	2' x 2' Ceiling Tile (white) Room 28, Center		ND		Cellulose	100%	
42	42	12" x 12" Floor Tile (cream/black) Black Mastic Room 21		ND Chrysotile	3%	Cellulose	6%	91% Binders

BULK SAMPLE ANALYSIS REPORT

Date:	April 1, 2003	Date Samples Received:	March 25, 2003
Client:	Kenneth J. Hahn Architects 1343 South 75 th Street Omaha, Nebraska	Project Location:	Ellsworth Air Force Base Building 7503 Rapid City, South Dakota
ATC Project Number:	07.24362.0003	ATC Lab Batch Number:	03-135

Lab ID	Client ID	Sample Description and Location	Layer	Asbestos Type	%	Other Fibrous Material	%	% Non-Fibrous Material
43	43	12" x 12" Floor Tile (gray/white) Yellow Glue Northeast Entry		ND ND		Cellulose	3%	97% Binders
44	44	12" x 12" Floor Tile (green) Black Mastic Room 23 (under carpet)		ND Chrysotile	ND <1%	Cellulose	4%	96% Binders
45	45	12" x 12" Floor Tile (cream/rust) Brown Adhesive Room 16, at Door to Room 14 (under carpet)		ND ND		Cellulose	5%	95% Binders
46	46	12" x 12" Floor Tile (light green) Black Mastic Room 23 at Door to Room 21		Chrysotile ND	3%	Cellulose	4%	93% Binders
47	47	Carpet Mastic (brown) Room 23 at Door to Room 21		ND		Cellulose	4%	96% Mastic Like



Brian Stemmermann, Analyst



Bob Arritt, Manager - Asbestos & Lead Services

ND = None Detected
Trace = <1%

- Current Regulations govern asbestos-containing material as material with >1% asbestos.
- Analytical Methods: EPA 600/M4-82-020, December 82, EPA 600/R-93/116, July 93
- Method limitations: Analysis of floor tile and other resinously bound materials by Polarized Light Microscopy may yield false negative results due to method limitations. In these cases ATC recommends alternative methods of analysis.
- Results shown are results obtained from samples by the method shown and do not constitute approval by use of the source or product from which sample was taken.
- ATC is currently a successful participant in the AIHA Bulk Asbestos Proficiency Analytical Testing Program for Laboratories Analyzing Asbestos by Polarized Light Microscopy.

ENVIRONMENTAL, GEOTECHNICAL AND MATERIALS PROFESSIONALS

BULK SAMPLE ANALYSIS REPORT

Date:	April 1, 2003	Date Samples Received:	March 25, 2003
Client:	Kenneth J. Hahn Architects 1343 South 75 th Street Omaha, Nebraska	Project Location:	Ellsworth Air Force Base Building 7238 Rapid City, South Dakota
ATC Project Number:	07.24362.0003	ATC Lab Batch Number:	03-136

Lab ID	Client ID	Sample Description and Location	Layer	Asbestos Type	%	Other Fibrous Material	%	% Non-Fibrous Material
1	01	Transite (tan/gray) East Side		Chrysotile	18%			82% Cementitious
2	02	Transite (tan/gray) East Side		Not Analyzed				
3	03	Transite (tan/gray) East Side		Not Analyzed				
4	04	Sheetrock and Joint Compound (gray/white) Northeast Area		ND		Cellulose	10%	90% Mineral Binders
5	05	Sheetrock and Joint Compound (gray/white) Corner Near Outside Door		ND		Cellulose	12%	88% Mineral Binders
6	06	Sheetrock and Joint Compound (gray/white) At Restroom Door		ND		Cellulose	10%	90% Mineral Binders
7	07	Window Caulking (tan) North Window		ND		Cellulose	1%	99%
8	08	Expansion Joint Caulking (tan) Center East Side of Building		ND		Cellulose	2%	98%



Brian Stemmermann, Analyst



Bob Arritt, Manager - Asbestos & Lead Services

ND = None Detected

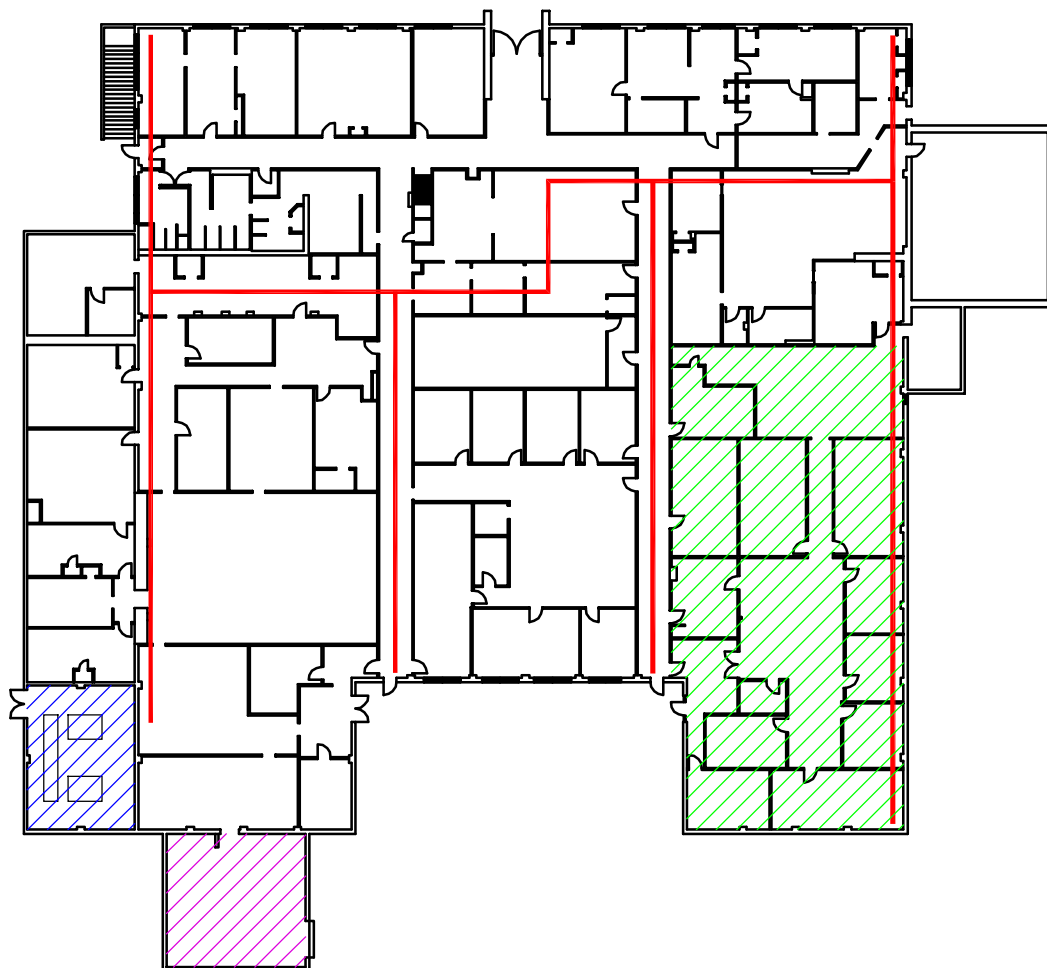
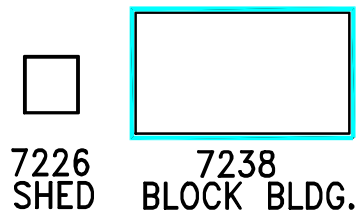
Trace = <1%

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- Method limitations: Analysis of floor tile and other resinously bound materials by Polarized Light Microscopy may yield false negative results due to method limitations. In these cases ATC recommends alternative methods of analysis.
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




ENVIRONMENTAL, GEOTECHNICAL AND MATERIALS PROFESSIONALS

APPENDIX B

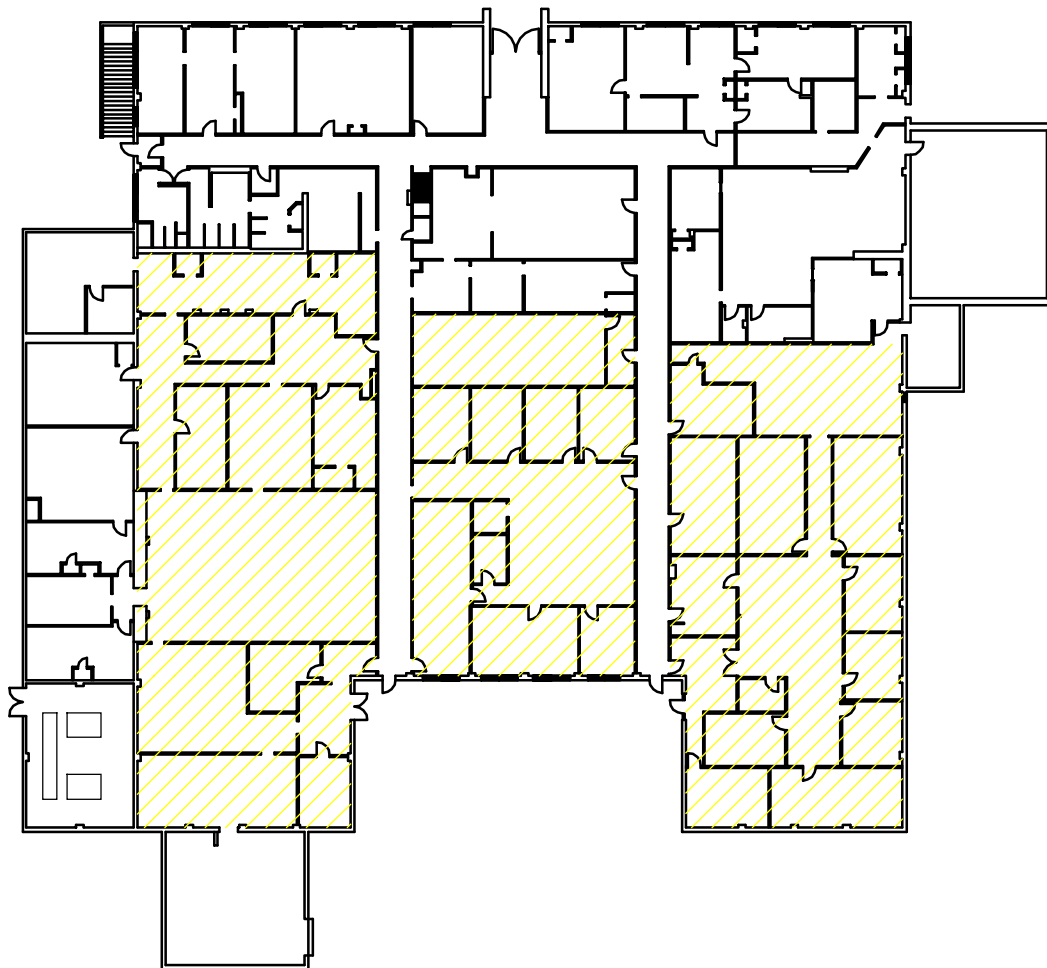
SCHEMATICS




7503
STEEL FRAME BLDG.

-  = Boiler, Header and Pipe Insulation
-  = Pipe Insulation (Aircell, Mag and Mechanical Fittings)
-  = 12"x12" Green/Light Green Floor Tile
-  = Black Mastic under 12"x12" Cream/Black Floor Tile
-  = Transite Siding

 ATC ASSOCIATES INC. 3712 SOUTH 132ND STREET OMAHA, NE 68144 (402) 697-9747 FAX (402) 697-9170				DRAWING TITLE Hazardous Materials Ellsworth Air Force Base Rapid City, South Dakota	
				SCALE Not to Scale	
JOB NUMBER 07.24362.0003	DWN BY PRV	DATE 3/31/03	CAD FILE 07.24362.0003	SHEET	



7503
STEEL FRAME BLDG.

 = PCB Ballasts (not labeled and above drop-ceiling)



ASSOCIATES INC.
3712 SOUTH 132ND STREET
OMAHA, NE 68144
(402) 697-9747
FAX (402) 697-9170

DRAWING TITLE

Hazardous Materials
Ellsworth Air Force Base
Rapid City, South Dakota

SCALE

Not to Scale

JOB NUMBER
07.24362.0003

DWN BY
PBV

DATE
3/31/03

CAD FILE
07.24362.0003

SHEET

APPENDIX C

INSPECTOR ACCREDITATIONS

LICENSE NUMBER: 02-6994I

EXPIRATION DATE: 9/3/2003

NAME: VINCENT BRANDTS
ADDRESS: 25797 428 AVE
CITY STATE ZIP: EMERY
SOCIAL SECURITY NUMBER:

504-46-6701

SD 57332



Certificate No: 5LM09030213BIR

Expiration Date: September 3, 2003

This is to certify that

Vince Brandts

has attended and successfully completed an

**ASBESTOS BUILDING INSPECTOR
REFRESHER TRAINING COURSE**

permitted by

the State of Minnesota under Minnesota Rules 4620.3702 to 4620.3722

and meets the requirements of

Section 206 of Title II of the Toxic Substances Control Act (TSCA)

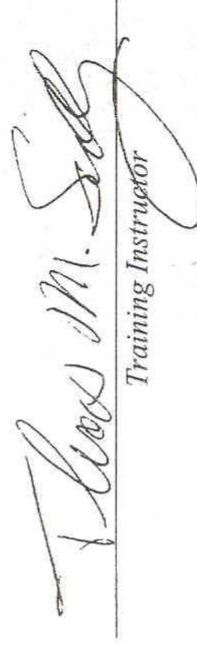
conducted by

Lake States Environmental, Ltd.

White Bear Lake, MN on September 3, 2002

Examination Date: September 3, 2002

Lake States Environmental, Ltd
P. O. Box 645, Rice Lake, WI 54868
(800) 254-9811


Training Instructor

ATTACHMENT NO. 14

**ENGINEERING TECHNICAL LETTER (ETL) 90-6,
ELECTRICAL SYSTEM GROUNDING, STATIC
GROUNDING AND LIGHTING PROTECTION**

**FOR COPY OF THIS DOCUMENT, SEE "REFERENCES"
FOLDER ON SOLICITATION CD-ROM. REQUIRES
ADOBE ACROBAT 5.0 TO READ**

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ATTACHMENT NO. 15

GEOTECHNICAL ENGINEERING REPORT

**COPY ON CD-ROM
(ACCESSIBLE FROM CD-ROM CONTRACT VIEWER)**

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ATTACHMENT NO. 16

GEOTECHNICAL ENGINEERING LETTER

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May 7, 2003.



2211 South 156th Circle
Omaha, Nebraska 68130
(402) 330-2202 Fax: (402) 330-7606

Kenneth Hahn Architects, Inc.
1343 South 75th Street
Omaha, NE 68124-1610

Attention: Mr. Kenneth Hahn

Re: 37th Bomber Squadron Operations Facility
Ellsworth Air Force Base
Box Elder, South Dakota
Terracon Project No. 05035024

Dear Mr. Hahn:

We have reviewed the opinion letters by Mr. Gordon Lewis and Mr. Alan Temple, dated May 5, 2003 and May 6, 2003, respectively, regarding the foundation recommendations noted in our Geotechnical Engineering Report, dated April 29, 2003.

In our geotechnical report, we recommended that the proposed foundations and floor slabs be supported on at least 3 feet of compacted and tested fill consisting of chemically modified (lime and/or fly ash treated) soil. This option would utilize the on-site clayey soils generated by site cuts and by an overexcavation within the proposed building area. In our opinion, soil modification can be used successfully to lower a soil's plasticity and affinity for water, and to provide a compacted, more uniform, moisture-resistant zone of bearing material. The financial advantages to utilizing on-site material versus select borrow material are obvious, but, as noted in the geotechnical report, additional laboratory testing would have to be completed to confirm proper mixtures and procedures to be utilized in the field. With adequate laboratory testing, field observation and field testing, we believe that soil modification is a feasible and cost-effective foundation support alternative.

In lieu of soil modification, Mr. Temple proposes to support the foundations and floor slabs on at least 5 feet of SDDOT Limestone Ledge Rock Base Course. In our opinion, this is a feasible alternative to provide both foundation support and to reduce the potential effects of soil swell within the natural clays and the existing clayey fill. We further agree with Mr. Temple that the excavations should be adequately sloped to provide rapid drainage of any accumulating groundwater or infiltrating surface water. Water should not be allowed to pond within the crushed stone on top of the existing natural clays or the clayey fill. The excavations should be sloped toward drain pipes that would collect and divert the water into a storm sewer system. Clayey backfill placed and compacted around the exterior foundation walls would help to reduce water infiltration into the drain system. We recommend that thorough construction observation be completed during the excavation within the building to confirm that an adequately sloping

subgrade is being achieved. The importance of the sloping subgrade and the drain system should be relayed to the earthwork contractor.

The recommendations presented in the "Site Preparation and Earthwork" section of the geotechnical report would still be applicable, with only slight modification, if the crushed stone option is selected. In our opinion, for 5 feet of crushed stone beneath the foundations, the lateral extent of the crushed stone should extend at least 5 feet beyond the edges of the footings. We recommend that clean crushed stone be compacted to a specification of at least 70 percent of relative density, as determined by ASTM D4253 and D4254. Well-graded granular soils with a percent fines content above about 10 percent may be more suited to compaction testing by modified or standard Proctor criteria. For this case, we recommend that the material be compacted to at least 90 percent of the modified Proctor maximum dry density (ASTM D1557). Lift thicknesses of the granular material should generally not exceed 9 inches. However, the lift thickness may be adjusted in the field in order to achieve compaction with the size of equipment used.

In our opinion, there may be some cost savings if a less-processed sand and gravel is used for several feet of thickness beneath the SDDOT Limestone Ledge Rock Base Course. The sand and gravel should be relatively clean and well-graded, with a gradation and compacted void ratio similar to the crushed stone. The sand and gravel could be placed within the lower 3 feet and the crushed stone could be placed for the upper 2 feet. The surface of the sand and gravel may be somewhat unstable until the crushed stone is placed and compacted above. With proper compaction, the use of sand and gravel would not affect the recommended bearing capacity of the foundations.

Please contact us if you have any questions regarding the above comments and recommendations.

Sincerely,
TERRACON



Jeffrey M. Kortan, P.E.
Senior Geotechnical Engineer

JMK/EDP:jmk/ym

Copies to: Addressee (3)



Edward D. Prost, Jr., P.E.
South Dakota No. 6107



ATTACHMENT NO. 17

**TRANSFER AND ACCEPTANCE OF MILITARY REAL
PROPERTY (DD FORM 1354)**

**COPY OF THIS ATTACHMENT IS INCLUDED AS AN
ATTACHMENT TO SECTION 01332 OF THE RFP**

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ATTACHMENT NO. 18

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ATTACHMENT 19

UNDERGROUND DISTRIBUTION SYSTEMS DESIGN POLICY (Reissue of SCM policy letter dated Jan 95)

1. Underground Distribution Systems

a. Underground distribution systems consist of a suitable system of cable placed in trenches, ducts, manholes, and handholes. Buried cable is employed effectively in main and branch feeder cable in long runs when distribution is extremely limited, where obstructions are minimal, and when critical circuits are not involved. Buried cables are usually placed in as direct a route as practical and where possibilities of its being disturbed are at a minimum. Along roadways, cable is located so that future surfacing will not extend over it. The cable route should not interfere with natural drainage. In normal soil, the right of way (area bordering the buried cable) should be at least 16 1/2 ft (5.02 m) wide. In swampy or marshy land, the right of way should be at least 20 ft (6.08 m) wide. (AFTO 31W3-10-12)

b. Underground cable is placed in interconnecting ducts, handholes, and manholes in areas where the underground distribution system is heavily populated, where obstructions are numerous, when the loss of service is unacceptable, or where planned growth of the underground distribution system requires ready access to cables and splices. The underground cable plant provides increased survivability, security, and longer service life. Its initial cost is normally offset by lower maintenance costs and longer useful life.

2. Identification of Cantonment Areas

a. The STEM-B, local base civil engineer, and C4 Systems Officer (CSO) will identify "cantonment areas" of the base where underground distribution systems, utilities, and obstruction densities make direct buried cable installation impractical. Cable installations in cantonment areas require all cables to be in manhole (handhole where applicable) and inter-connecting duct systems. A waiver for this requirement must be approved by the base civil engineer and STEM-B.

b. It is the responsibility of the engineers that plan and design the underground distribution system to consider factors that affect cost, service life, maintainability, reliability, security, and survivability. Any cable installations affecting the local area must be coordinated with the base CSO, civil engineer, and STEM-B after review of the Base Communications-Computer System Blueprint (BCB), the Base Comprehensive Plan (BCP), and MILCON project list.

3. Criteria for Direct Buried Cable Versus Cable Installation In Manholes and Inter-connection Ducts Outside the Cantonment Area

a. The design engineer will determine whether cable(s) requirements can be met by:

(1) accessing an existing manhole and inter-connecting duct system

(2) altering the cable route to a point where ducts exist or are not needed

(3) temporarily removing existing cable from service, removing cable from existing duct, installing a new larger capacity cable (than that which was removed) and transferring circuits from the previously removed cable to the new cable.

b. If more than 40% of the cable route, defined as linear feet of obstruction/linear feet of cable route, is obstructed, a manhole/duct system shall be used. Obstructions are defined as surface and sub-surface features in the planned cable route that intrude into the right of way and must be avoided by altering the cable route during installation. Examples of obstructions include:

Historical sites

Roads, parking lots, driveways

Buildings

Concrete pads, monuments, markers

Wetlands, marshlands, state and federal preservation areas

Railroad, bridge, and pipeline crossings

Utilities such as electrical, sewer, gas, water, etc. (includes existing cables and manhole/duct systems)

Environmental contamination of soil, landfills, hazardous waste dumps

c. Where possible, joint use manhole/duct systems will be used. New manhole/duct systems planning will involve as a minimum, the base civil engineer, CSO, and STEM-B. All manhole/duct systems planning will consider joint use manholes.

d. A manhole/duct system shall be used when crossing under flightline areas (aprons, parking ramps, runways, taxiways, etc.).

ATTACHMENT NO. 20

NOT USED

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ATTACHMENT 21

Communications Requirements for 37 BS Complex

30 Sep 2002

POC: SSgt Chris Gleason, 28 CS/SCX, DSN 675-6888

POC: Romulo Maliwat, STEM-B for Ellsworth, Comm 405-734-7627

References:

- EIA/TIA 568-B1,2,3 Commercial Building Telecommunications Standard
- EIA/TIA 569-A Commercial Building Standard for Telecommunications Pathways and Spaces
- EIA/TIA 606 The Administration Standard for the Telecommunications Infrastructure of Commercial Buildings
- EIA/TIA 607 Commercial Building Grounding and Bonding Requirements for Telecommunications
- TSB-67 (TSB Telecommunications System Bulletin) Transmission performance specifications for field-testing of UTP cabling systems.
- TSB-75 Additional specifications for open office systems.
- National Electric Code (use most current)
- Mil Standard 188-124 (A/B/C)
- Mil Handbook 419 Volumes 1 & 2
- Engineering Technical Letter (ETL) 02-12 Communications and Information System Criteria for Air Force Facilities

The above References can be found at the following web sites below:

<http://www.hubbell-canada.com>

<http://www.nordx.com>

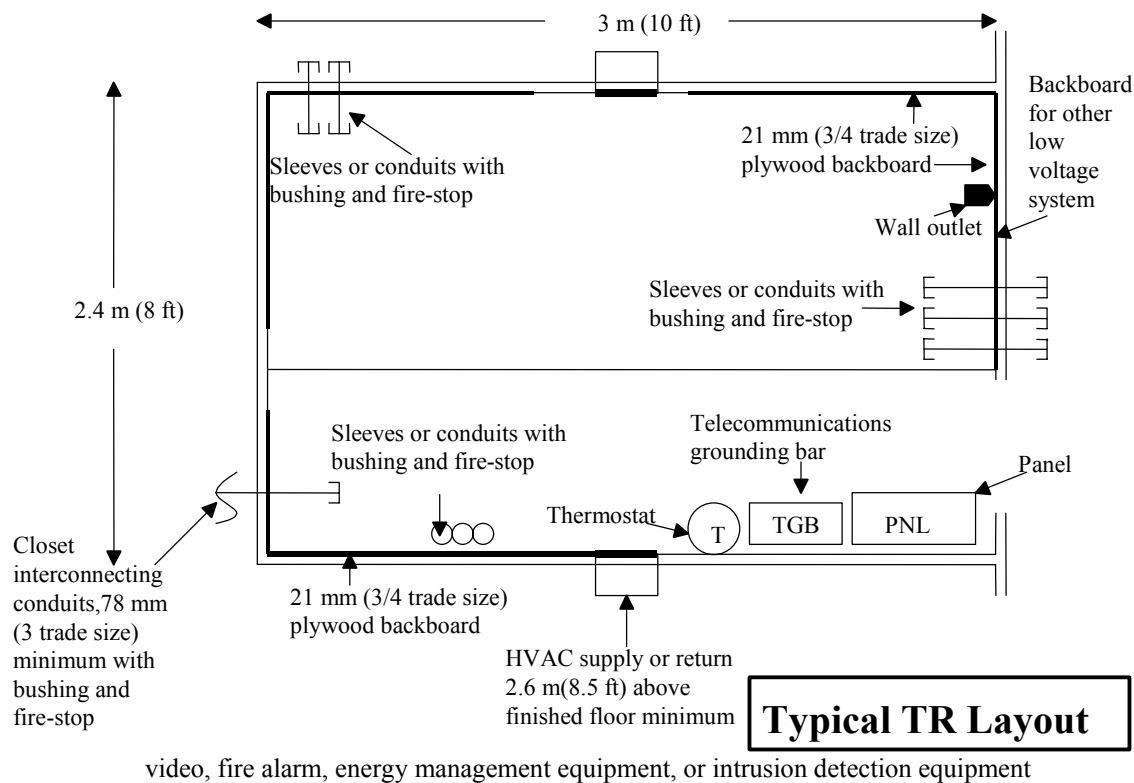
<http://www.lightningsafety.com>

<http://www.afcesa.af.mil/publications/ETLs/default.html>

Communications Design Requirements for 37 BS Complex

- 1) **Telecommunications Room.** Provide a 10'X15" Main Comm Room for the 37 BS.
 - a) The design aspects of the equipment room are specified in the TIA/EIA-569-A standard. Equipment rooms usually house equipment of higher complexity than telecommunications closets. Any or all of the functions of a telecommunications closet may be provided by an equipment room. An equipment room is a special-purpose room which provides space and maintains a suitable operating environment for large telecommunications equipment. Equipment rooms are generally considered to serve an entire building (or even a campus), whereas a telecommunications closet serves one floor of a building or a portion of a floor. Equipment rooms: Terminate and cross-connect backbone and horizontal cables. Provide work space for service personnel. Are designed according to specific requirements associated with the cost, size, growth, and complexity of the equipment. Can also serve as a portion of an entrance facility or as a telecommunications closet. House large pieces of common control equipment such as voice, data,

Telecommunications Room (TR)



b) **Entrance Outlet:** Provide four each 4-inch conduit entrance outlet for the 37 BS Main Comm Room.

Building entrance facilities provide the point at which outdoor cabling interfaces with the intrabuilding backbone cabling. The physical requirements of the network interface are defined in the TIA/EIA-569-A standard.

Entrance facility includes the cabling components needed to provide a means to connect the outside service facilities to the premises cabling. This can include the following:

- Service entrance pathways
- Cables
- Connecting hardware
- Circuit protection devices
- Transition hardware
- Other equipment

Services to a specified point of demarcation, which is the interface between the service provider's facility and the customer. The cabling installer is responsible for extending services from the demarc to the structured cabling system of the tenant(s). Entrance facility pathways and spaces are to be completed according to the requirements set forth in ANSI/TIA/EIA-569-A.

2) **Facility telephone cabling:** Use *Category 5E for facility telephone cable for the 37 BS*

a) *Must comply with all EIA/TIA specifications listed above*

b) *Each Category 5E cable run must not exceed 100 meters in length*

c) *Category 5E* cabling must maintain as a minimum five inches of separation from all fluorescent lights.

d) *Category 5E* cabling must maintain as a minimum twelve inches of separation if installed parallel to 120V power cabling. Note: for 220V power a 24" separation must be maintained for parallel runs (12" if perpendicular).

e) Maximum allowed untwisting of Category 5E cable pairs is ½ inch at any termination.

f) Maximum bend radius for Category 5E cabling is four times the outside diameter.

g) Do not pinch Category 5E cabling when installing tie wraps.

h) *Color White Category 5E cable.* Plenum/Riser rated cabling shall be used where required.

i) Install, as a minimum, a T568B three-gang wall plate with RJ45 type jacks one foot from each power outlet throughout the building.

j) Connect all CAT 5 telephone cables to 110 punch-down blocks in Communication Room

k) Provide inter-facility cable tray

l) Contractor provides cable test results to Corp. of Engineers, with copy provided to 28 CS/SCX. Category 5E cable installations must meet requirements in EIA/TIA 568B1. As a minimum, successful test results, for each Category 5E cable run, must be provided for the following parameters:

- i) Wire Map (Test for Crossed Wire Pairs, Pair Shorts, and Split Pairs)
- ii) Length
- iii) Attenuation
- iv) Near End Crosstalk (NEXT) End 1 and End 2
- v) Equal Level Far-End Crosstalk (ELFEXT)
- vi) Power Sum ELFEXT (PS-ELFEXT)
- vii) Propagation Delay
- viii) Delay skew
- ix) Return Loss
- x) Attenuation Crosstalk Ratio (ACR)

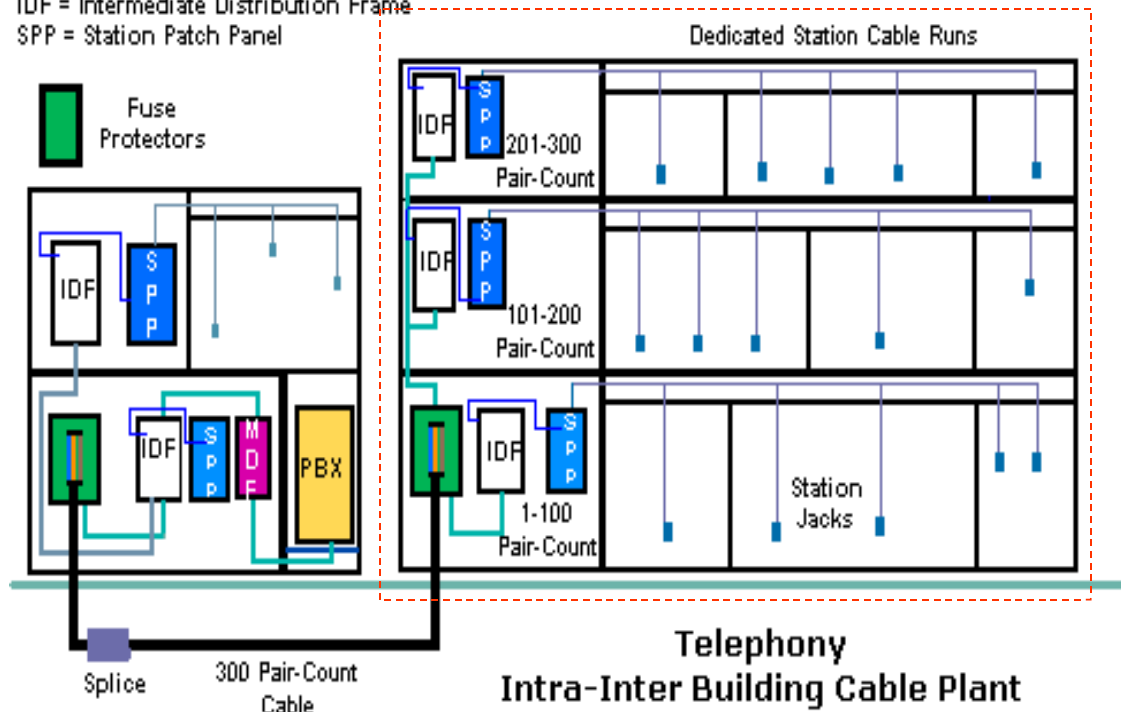
m) **37 BS submits AF Form 3215 for phone requirements upon final design**

n) **Telephone Intra-building Cable Plant**

MDF = Main Distribution Frame

IDF = Intermediate Distribution Frame

SPP = Station Patch Panel



3) **Facility data cabling: Use Category 5E for facility data cable for the 37 BS**

a) **Must comply with all EIA/TIA specifications listed above.**

b) **Each Category 5E cable run must not exceed 100 meters in length**

c) Category 5E cabling must maintain as a minimum five inches of separation from all fluorescent lights.

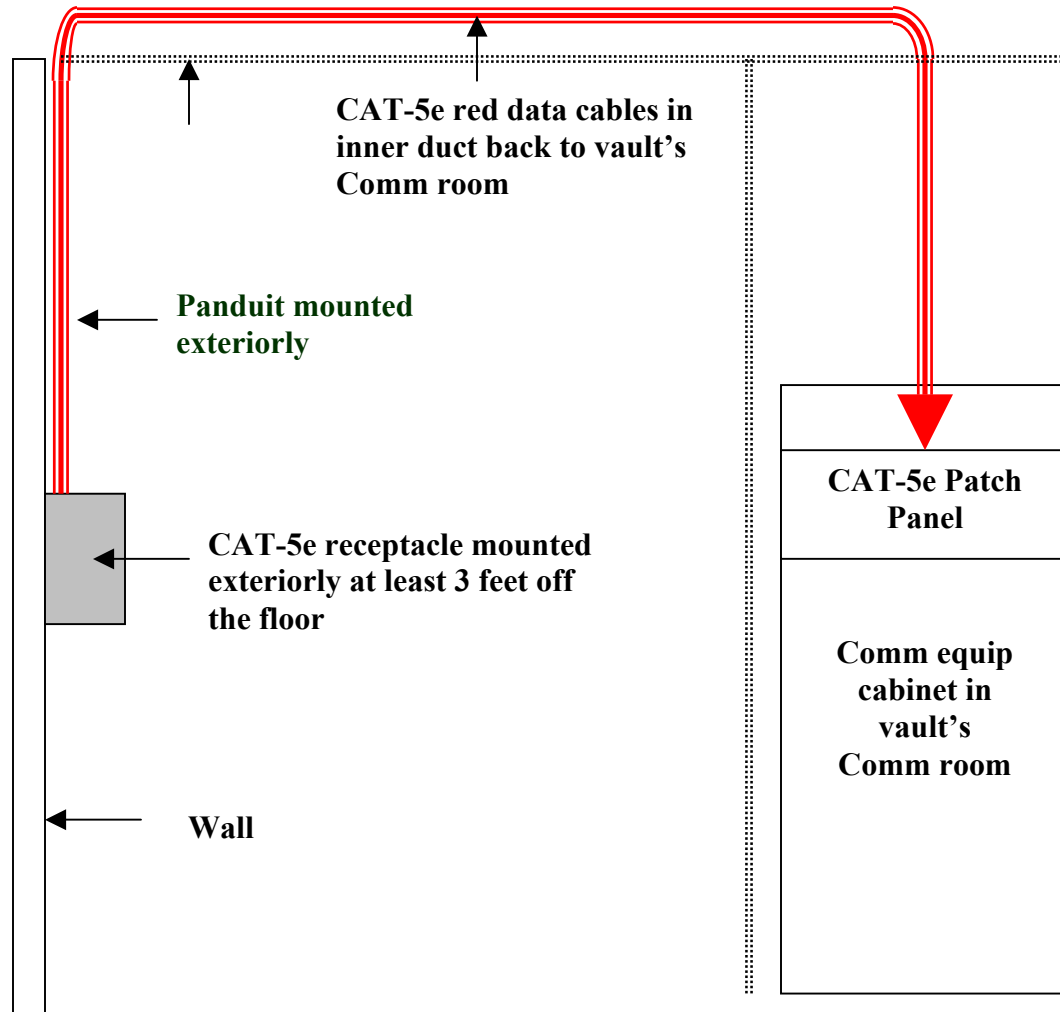
d) Category 5E cabling must maintain as a minimum twelve inches of separation if installed parallel to 120V power cabling. Note: for 220V power a 24" separation must be maintained for parallel runs (12" if perpendicular).

- e) Maximum allowed untwisting of Category 5E cable pairs is ½ inch at any termination.
- f) Maximum bend radius for Category 5E cabling is four times the outside diameter.
- g) Do not pinch Category 5E cabling when installing tie wraps.
- h) **Color Blue Category 5E cable.** Plenum/Riser rated cabling shall be used where required.
- i) Install, as a minimum, a T568B three-gang wall plate with RJ45 type jacks one foot from each power outlet, in user locations and common user areas (conference rooms, copy machine locations, fax machine locations etc.), throughout the building.
- j) Connect all data cables to T568B CAT 5E patch panel, mounted within equipment cabinet, in Main Communications Room.
- k) Provide grounded/bonded inter-facility cable tray
- l) Contractor provides cable test results to Corp. of Engineers, with copy provided to 28 CS/SCX. Category 5E cable installations must meet requirements in EIA/TIA 568B1. As a minimum, successful test results, for each Category 5E cable run, must be provided for the following parameters:
 - i) Wire Map (Test for Crossed Wire Pairs, Pair Shorts, and Split Pairs)
 - ii) Length
 - iii) Attenuation
 - iv) Near End Crosstalk (NEXT) End 1 and End 2
 - v) Equal Level Far-End Crosstalk (ELFEXT)
 - vi) Power Sum ELFEXT (PS-ELFEXT)
 - vii) Propagation Delay
 - viii) Delay skew
 - ix) Return Loss
 - x) Attenuation Crosstalk Ratio (ACR)

4) **Facility Data Cabling Within Classified Working Areas**

- a) Must comply with all EIA/TIA specifications listed above.
- b) Each **Category 5E** cable run must **not exceed 100 meters** in length
- c) Category 5E cabling must maintain as a minimum five inches of separation from all fluorescent lights.
- d) Category 5E cabling must maintain as a minimum twelve inches of separation if installed parallel to 120V power cabling. Note: for 220V power a 24" separation must be maintained for parallel runs (12" if perpendicular).
- e) Maximum allowed untwisting of Category 5E cable pairs is ½ inch at any termination.
- f) Maximum bend radius for Category 5E cabling is four times the outside diameter.
- g) Do not pinch Category 5E cabling when installing tie wraps.
- h) **Color Red Category 5E cable.** Plenum/Riser rated cabling shall be used where required.
- i) Red cables need to be installed within **inner duct** when installed above the ceiling.

- j) Install, as a minimum, a ***T568B three-gang (exteriorly mounted, at least 3 feet above floor)*** receptacle box with ***RJ45 type jacks*** in each room within classified working area.
- k) ***Connect all data cables to T568B CAT 5 patch panel, mounted within equipment cabinet, in vault's Communications Room.***



l) Horizontal Cabling

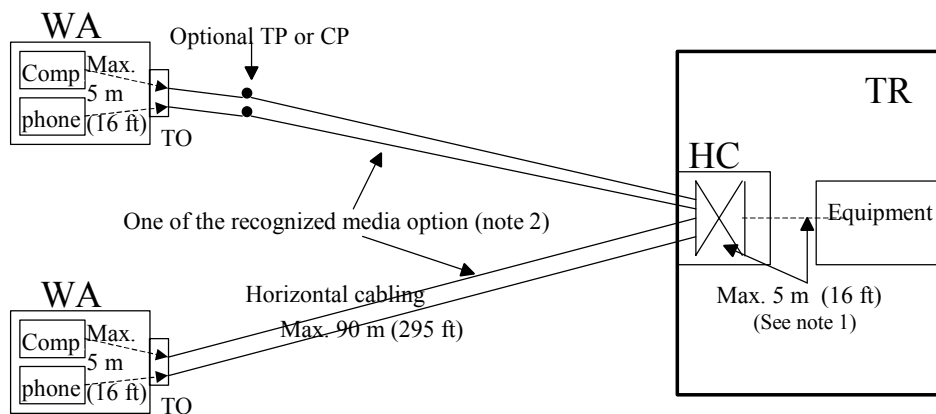
The horizontal cabling is the portion of the telecommunications cabling system that extends from the work area telecommunications outlet/connector to the horizontal cross-connect in the telecommunications room. The horizontal cabling includes horizontal cables, telecommunications outlet/connectors in the work area, mechanical terminations, and patch cords or jumpers located in the telecommunications room, and may include multi-user telecommunications outlet assemblies and consolidation points.

NOTE: The term "horizontal" is used since typically the cable in this part of the cabling system runs horizontally along the floor(s) or ceiling(s) of a building.

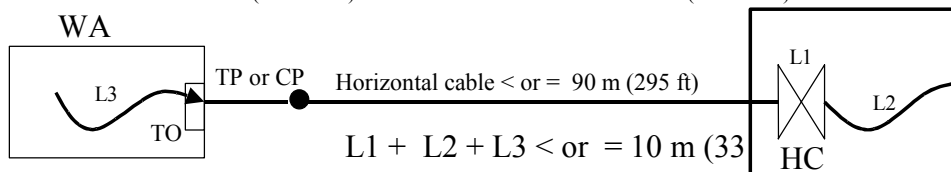
The following list of common services and systems should be considered when the horizontal cabling is designed. (The list is not intended to be complete.)

- Voice telecommunications service
- Premises switching equipment
- Data communications
- Local area networks (LAN)
- Video
- Other building signaling systems (building automation systems such as fire, security, HVAC, EMCS, etc.)

Horizontal Cabling System Schematic



Total max. length: 5 m (16 ft) + 90 m (295 ft) + 5 m (16 ft) = 100 m (328 ft)
(See note 1)



5) Telecommunications Room Requirement: Provide the following to Comm Room for the 37 BS.

- Install ground box, with bus bar, connected to facility ground with minimum 6 AWG wire for grounding cabinets and racking material.
- Provide dedicated environmental control unit to maintain constant temperature of not less than 40 degrees (F) or greater than 85 degrees (F)
- Provide 2 convenience power outlets per wall (These outlets are for lights, vacuum cleaner etc.)
- Provide an electrical outlet box with at least six (120 VAC, 20 Amp, 60 Hz) dedicated circuit breakers connected to technical power. (These circuits will be used to power

equipment racks) Install equipment cabinet, with 36" minimum clearance all around, with power strip connected to one of the six dedicated circuits.

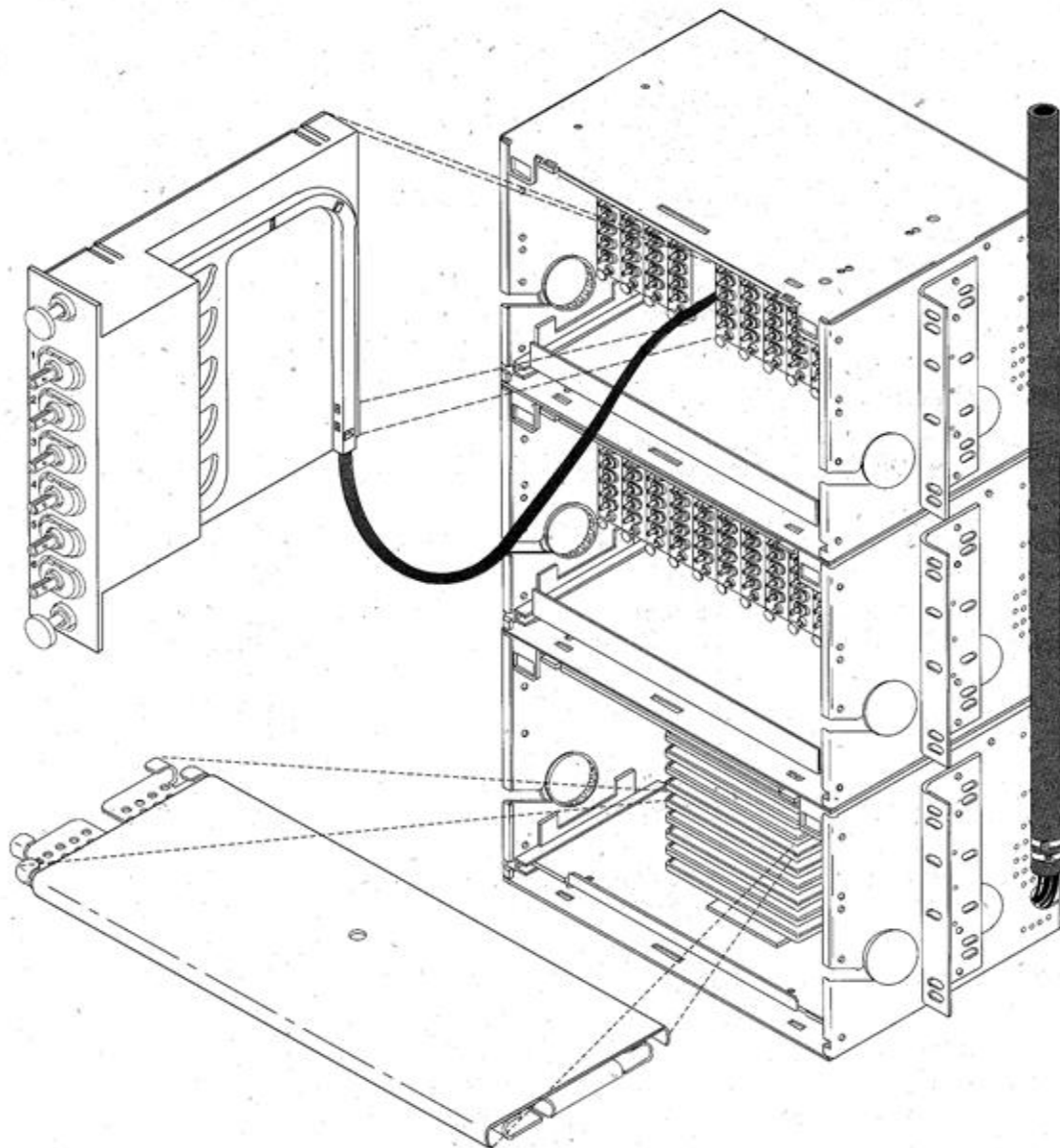
e) Provide (3/4") plywood on one wall. Paint to match adjacent walls.

f) Contractor provides and installs enclosed equipment cabinet with the following specifications:

- i) Height - 78 inches
- ii) Interior Panel Space Width - 19 inches
- iii) Exterior Width - 28.28 inches
- iv) Interior Opening Height - 70 inches
- v) Depth - 30 inches
- vi) Weight 315 lbs
- vii) 10 inch high-power cooling fan
- viii) Six-outlet power strip
- ix) Fixed shelf
- x) Side panels
- xi) 4 full-length vertical organizers
- xii) Sturdy, heavy-gauge steel construction able to hold 3000 lb load rating
- xiii) Front and rear doors with security lock
- xiv) Vertical cable organizers
- xv) Front Plexiglas door

g) Mount equipment cabinet to floor

The Fiber Optic Distribution Panel (FODP) consists of a splice organizer, connector sleeves and other miscellaneous hardware. The FODP provides connectivity between indoor and outdoor fiber optic cable (single mode and multimode). FODPs capable of housing and connecting the various optical fiber sizes: 12, 24, 36, 48, 72, 144 and 288. The splice organizer provides protection for both the splices and the fiber. In addition, the splice organizer is equipped with a tray to store excess fiber. The FODP is provided in wall and rack mount versions with 19-inch and 23-inch widths. The FODPs have access from top or bottom and are able to interconnect when multiple FODPs are placed together in the same termination point. See Figure for detail.



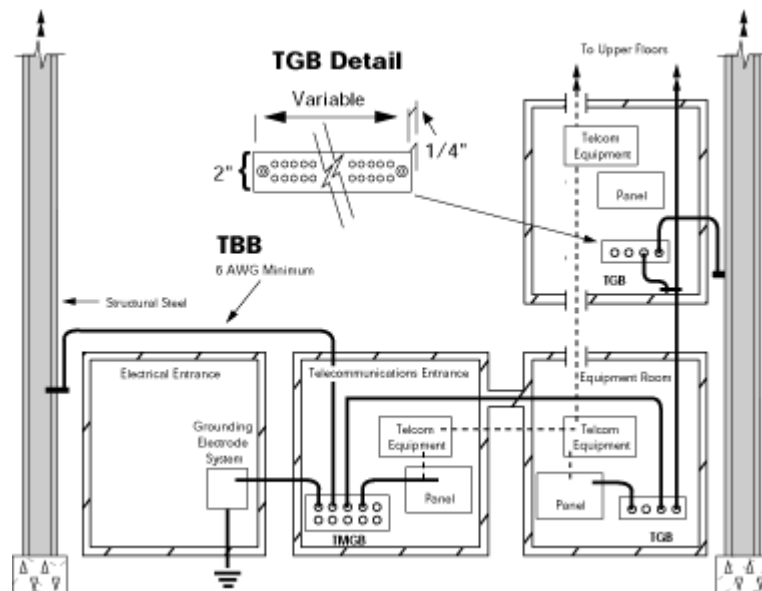
6) Grounding: Install ground box, with bus bar, connected to facility ground with minimum 6 AWG wire for grounding cabinets and racking material.

The purpose of ANSI/TIA/EIA-607 standard specifies a uniform telecommunications grounding and bonding infrastructure that shall be followed within commercial buildings.

Solid copper grounding busbars are installed with insulated standoffs in entrance facilities (1/4" thick X 4" high X variable length) and the equipment room, as well as each telecom closet (2" high is sufficient here). Each busbar is drilled with rows of holes according to NEMA standards, for attachment of bolted compression fittings.

Telecommunications equipment, frames, cabinets and voltage protectors are typically grounded to these busbars. Busbars are connected by a backbone of insulated, solid copper cable between all closets and rooms (minimum 6 AWG, 3/0 AWG recommended). This backbone is connected to a main grounding busbar in the telecommunications entrance facility, to an earth ground in the electrical entrance facility, and to structural steel on each floor. Bonding conductor cabling shall be colored green or labeled appropriately.

Schematic of Grounding/Bonding Network



7) Communications Manhole, T.O. 31W3-10-22

- Manholes are required for cable splicing locations and to facilitate cable installation. Spacing is determined by the route, distribution points to buildings or other duct systems, maximum cable reel lengths, and avoidance of utilities and obstructions. Maximum spacing between manholes should not exceed 500 feet.
- Manhole sizes are determined by the projected quantity of splices and cables to be installed in the manhole, number of ducts entering/leaving the manhole, and physical limitations of surrounding area.
- Dimensions of splice cases required to seal a splice on a cable are typically 24 to 46 inches in length and 2 to 10 inches in diameter. Cables must enter the splice case end plate perpendicularly, which typically requires 6 to 12 inches of space on each side of the splice.
- Cables installed inside the manhole (looping around inside the manhole from a splice to splice, a splice to a duct or from a duct to a duct) have typical bending radii of 6 to 10 times the outside diameter of the cable (6"-36").
- Typical sizes of manholes are 4 to 6 feet wide by 8 to 12 feet long by 6 or 7 feet deep.

- Typical items in a manhole include a sump hole, cable racks, ground rod, pulling-in irons, manhole lid frame, manhole lid extension rings and manhole lid clearly marked to identify the manhole as for communication. A ladder inside the manhole may also be required.

8) Duct or Conduit, Refer to T.O. 31W3-10-22: Provide four each 4-inch duct from the Communication Manhole to the Main Comm Room for the 37 BS: The Contractor shall install two 4" ducts to service telephone run, one 4" inner-quad duct to service fiber and one spare from Main Communications Room to servicing manhole

- Duct quantity between manholes is determined by actual and future installation requirements. As rule, no less than four ducts should be installed.
- Typical conduit materials include steel, galvanized iron pipe and polyvinyl chloride (PVC). Normally PVC is used.
- The conduit inside diameter is determined by the maximum outside diameter of any cables to be installed. Typically the conduit has a 4 or 5 inch inside diameter.
- Requirement for concrete encasement of ducts is normally a base preference. Advantage of concrete encasement is protection of the ducts. Disadvantages of concrete encasement are ease of repairing the duct(s) and cost.
- Grading or sloping of the ducts must be specified to ensure debris does not accumulate blocking the conduit.

9) Video and Cable TV Service

- a) 37 BS identifies room locations for MCP installed coax runs and submits AF Form 3215 requirement to 28 CS/SCS for provider cable hookup
- b) Cable selection is important to achieving high quality design. Installers need to know when to use 75-ohm baseband or broadband coaxial cable, RG-59, RG-6 or RG-11 cable, fiber optic or unshielded twisted pair cable.

The standard medium installed in video applications is 75-ohm baseband and broadband coaxial cable, whereas for data communications, 50-ohm coaxial cable is commonly used. If you use 50-ohm coaxial cable rather than 75-ohm, an impedance imbalance occurs, resulting in an attenuation problem as video signals start to weaken.

Selecting cable that is frequency-swept will ensure attenuation properties at listed frequencies. Most manufacturers publish specification sheets listing cable property characteristics. In terms of attenuation, for example, RG-59 baseband cable can be run to 600 feet, and RG-6 and RG-11 baseband cable are effective to 850 and 1200 feet, respectively. Broadband cable distances, however, vary with channel frequencies.

Cable shielding is also critical to prevent noise problems caused by electromagnetic or radio frequency interference (EMI/RFI). Baseband and broadband video cabling shield cover

should be a minimum of 95 percent. Before purchasing cable, you should review specifications on shielding characteristics and cable composition

c) **Installing Video Cabling**

- **Central Power:** Video systems with multiple cameras should always be powered from a central location. Most large buildings are equipped with multiphase power systems. If cameras are plugged into existing room receptacles, phase differentials can cause transmission problems. To eliminate these problems, hook up high quality power cabling to a centrally located power transformer and pull this cable with the video cabling to each camera. This centralized configuration eliminates not only phase problems but also power surges that might damage sensitive camera electronics.
- **Central Grounding:** Video systems should also have a central ground source, because any type of ground loop or differential between a central power point and video camera sites will cause transmission difficulties. Instead, using three-conductor cable, carry the ground from the central power source to the cameras. Use 16 AWG cable because it will minimize resistance to ground. In addition, tape and wrap all connections to ensure no physical grounding exists along the route; this can also cause ground-loop problems.
- **Cable Pulling:** Do not stretch coaxial cable when it is being pulled. Stretching changes the distance between the cable's central conductor and shielding, which causes a change in impedance, resulting in attenuation. To prevent this problem, cut cable to manageable lengths.
- **Connections:** For baseband cable, you should use BNC connectors. For broadband cable, use F-type connectors.

10) **LMR antenna Mounting**

- a) Install conduit runs for LMR antenna cabling, as required
- b) Provide antenna-mounting poles, as required
- c) 37 BS submits AF Form 3215 for LMR relocations upon final design

11) **Public Address (PA) System**

- a) Requirement identified by 37 BS

ATTACHMENT NO. 22

LIGHTING FIXTURE CUT SHEETS

**COPY ON CD-ROM
(ACCESSIBLE FROM CD-ROM CONTRACT VIEWER)**

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ATTACHMENT NO. 23

**ELLSWORTH AFB ENGINEERING CRITERIA,
CHAPTER 4**

**COPY ON CD-ROM
(ACCESSIBLE FROM CD-ROM CONTRACT VIEWER)**

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ATTACHMENT NO. 24

**TRANSMITTAL OF SHOP DRAWINGS, EQUIPMENT
DATA, MATERIAL SAMPLES,
OR MANUFACTURER'S CERTIFICATES OF
COMPLIANCE (ENG. FORM 4025)**

**THIS DOCUMENT IS AN ATTACHMENT TO SECTION
01330 SUBMITTAL PROCEDURES OF THE RFP
SOLICITATION**

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ATTACHMENT NO. 25

**U.S. AIR FORCE MCP PROJECTS;
PROJECT SIGN DETAILS**

**THIS DOCUMENT IS AN ATTACHMENT TO SECTION
00800 SPECIAL CONTRACT REQUIREMENTS OF THE
RFP SOLICITATION.**

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ATTACHMENT NO. 26

**SECTION 02561, (SOUTH DAKOTA) RIGID, FLEXIBLE,
AND CRUSHED ROCK PAVEMENTS (AND CONCRETE
SIDEWALK AND CURB AND GUTTER)**

**A ELECTRONIC COPY OF THIS UNEDITED SECTION
(02561.SEC) IS INCLUDED ON THE SOLICITATION CD-
ROM UNDER FOLDER LABELED “GUIDES”.**

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DIVISION 02 - SITE WORK

SECTION 02561

(SOUTH DAKOTA) RIGID, FLEXIBLE, & CRUSHED ROCK PAVEMENTS [AND CONCRETE
SIDEWALK AND CURB AND GUTTER]

08/99

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-- End of Section Table of Contents --

SECTION 02561

(SOUTH DAKOTA) RIGID, FLEXIBLE, & CRUSHED ROCK PAVEMENTS
[AND CONCRETE SIDEWALK AND CURB AND GUTTER]

08/99

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

ASTM INTERNATIONAL (ASTM)

ASTM C 127	(1988) Specific Gravity and Absorption of Coarse Aggregate
ASTM C 128	(1997) Specific Gravity and Absorption of Fine Aggregate
ASTM D 1075	(1996) Effect of Water on Compressive Strength of Compacted Bituminous Mixtures
ASTM D 1556	(1990; R 1996) Density and Unit Weight of Soil in Place by the Sand-Cone Method
ASTM D 1557	(1991) Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft ³ (2,700 kN-m/m ³))
ASTM D 2041	(1995) Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures
ASTM D 2726	(1996a) Bulk Specific Gravity and Density of Non-Absorptive Compacted bituminous Mixtures
ASTM D 2950	(1991; R 1997) Density of Bituminous Concrete In Place by Nuclear Method
ASTM D 3381	(1992) Viscosity-Graded Asphalt Cement for use in Pavement Construction
ASTM D 3569	(1995) Specification for Joint Sealant, Hot Applied, Elastomeric Jet Fuel Resistant-Type for Portland Cement Concrete Pavements

SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION (SDDOT)

SDDOT Standard Specifications for Road and Bridge Construction, and Supplemental Specifications, 1990 Edition

CORPS OF ENGINEERS (COE) HAND BOOK FOR CONCRETE AND CEMENT

CRD-C 171	(1995) Standard Test Method For Determining Percentage of Crushed Particles in Aggregate
CRD-C 526	(1992) Sealants, Joints, Two Component, Jet Blast-Resistant, Cold Applied, For Portland Cement Concrete Pavement
CRD-C 649	(1995) Standard Test Method For Determining Unit Weight, Marshall Stability, and Flow of Bituminous Mixtures
CRD-C 650	(1995) Standard Test Method For Density and Percent Voids in Compacted Bituminous Paving Mixtures
CRD-C 652	(1995) Standard Test Method For Measurement of Reduction in Marshall Stability of Bituminous Mixtures Caused by Immersion in Water

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-06 Test Reports

Aggregate Moisture-Density Relationships; G-A0.

New and Salvaged Base Course, Aggregate Surface Course, and Underlying Course

Certified Refinery Analysis; G-AO.

Asphalt Cement, Tack Coat

Bituminous Surface Course; G-AO.

Include [Hveem][Marshall] Property Results

Aggregate; G-A0.

JMF, Base Courses, Aggregate Surface Courses, and Portland Cement Concrete.

Portland Cement Concrete; G-AO.

Airfield Pavement Mix Design, Parking Area, Sidewalk, and Curb and Gutter.

Joint Sealant; G-AO.

Certified Test Results for Airfield Pavement, Sidewalk, and Curb and Gutter.

Joint Fillers; G-AO.

Certified Test Results for Airfield Pavement, Sidewalk, and Curb and Gutter

Dowels; G-AO.

Certified Test Results for Airfield Pavement.

temperature-viscosity; G-AO.

Certified test results showing the relationship between temperature and viscosity of material.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.1 DEFINITION

Degree of compaction for the Aggregate Moisture-Density Relationship required is expressed as a percentage of the maximum density obtained by the test procedures presented in ASTM D 1557, "Procedure C". This will be abbreviated hereinafter as percent laboratory maximum density.

3.2 MODIFICATION TO THE SDDOT

a. Reference to "Engineer" and "Department" in the SDDOT shall mean the Contracting Officer or Representative.

b. Sections "Acceptance", "Method of Measurement" and "Basis of Payment" shall not apply.

3.3 PAVEMENT REMOVAL

Where pavement is to be removed at the locations shown on the drawings, the pavement shall be sawed using the double saw-cut method as shown on the drawings, full depth, and with an approved concrete saw prior to removal so as to leave a straight, true and vertical edge. The pavement material and underlying courses shall be removed in a manner that will not disturb the adjacent in-place material to remain. Material that is to remain but damaged by the Contractor's removal operations, shall be replaced at no additional cost to the Government as described herein. Base course material removed from the designated removal area as shown on the drawings shall be [wasted.][salvaged, stockpiled and reused except for the top 6 inches.] The top 6 inches shall be new aggregate base course material meeting the requirements as specified below. The top 6 inches of base course material shall be scarified and recompact to 100% of the maximum laboratory density. Pavement material from the removal area shall be stockpiled [as show on the drawings][in the location as determined by the contracting officer]. Any unused material shall be disposed of [off Government controlled land at the Contractor's expense].

3.4 BITUMINOUS SURFACE COURSE.

Bituminous surface course shall conform to the requirements specified in the SDDOT Section 320, "ASPHALT CONCRETE, GENERAL" for materials and construction procedures except as modified herein. Asphalt concrete shall conform to section 322, "ASPHALT CONCRETE - CLASS G". Aggregate shall meet the requirements as described in section 880, "AGGREGATE FOR ASPHALT CONCRETE". A recycled mixture shall not be used. The quantity of natural sand (fine aggregate) for the surface course mixture shall not exceed 20 percent by weight of coarse and fine aggregate and material passing the No. 200. [Bituminous surface course mixture shall be designed in accordance with CRD-C 649, CRD-C 650, and CRD-C 652. The finished mixture shall meet the requirements hereinafter described when tested in accordance with the above mentioned CRD-C's. The absorption value of the entire blend of aggregate shall be determined in accordance with ASTM C 127 and ASTM C 128.

Aggregate with an absorption value which does not exceed 2.5 percent will be designated as nonabsorptive, and the apparent specific gravity or ASTM D 2041, shall be used in computing the voids total mix and voids filled with bitumen. Aggregate with an absorption value which exceeds 2.5 percent will be designated as absorptive, and ASTM D 2041, shall be used in computing voids total mix and voids filled with bitumen.] The bituminous surface course mixture shall meet the following physical requirements:

Absorptive] Test Property]	[CRD-C]	[Nonabsorptive	
	[Method]	[Aggregate	Aggregate
Stability, minimum, pounds	[649]	1000	1000
Flow, maximum, 1/100-inch units	[649]	20	20
Voids, total mix, percent	[650]	3-5	2-4
Voids, filled with bitumen, percent	[650]	70-80	80-90

3.4.1 Reduction in Stability by Immersion

If the index of retained stability of the specimens is less than 75, when tested in accordance with [CRD-C 652] [ASTM D 1075], the aggregates shall be rejected or the bitumen shall be treated with an approved antistripping agent. The amount of antistripping agent added to the bitumen shall be sufficient, as approved by the Contracting Officer, to produce an index of retained stability of 75 or greater when tested in accordance with [CRD-C 652] [ASTM D 1075]. No additional payment will be made for any addition of antistripping agent that may be required.

3.4.2 Contractor's Option

At the option of the Contractor, in lieu of developing a new job-mix formula for surface course construction, the Contractor may use a job-mix formula for surface course construction which has been used within the last 12 months on another nearby Corps of Engineers project, provided in each instance that the same materials proposed for use on this project are being used, the JMF meets the previously specified criteria, and the JMF and test results are less than 12 months old. Use of this option will permit no changes o aggregate requirements or to other requirements specified in this section and shall not be the basis for additional cost to the Government or extension of time.

3.5 BITUMINOUS MATERIAL

Approval of bituminous materials shall be based on a certified refinery analysis submitted by the Contractor, showing that the material conforms to the requirements of the SDDOT or as specified herein.

3.5.1 ASPHALT CEMENT

Asphalt cement shall conform to the requirements specified in Section 810, "ASPHALT MATERIAL," of the SDDOT [and ASTM D 3381]. Asphalt cement shall be viscosity grade AC-10, penetration grade 85-100 or an approved performance graded (PG) cement.

3.5.2 BITUMINOUS PRIME COAT

Bituminous prime coat shall conform to and be placed to the requirements specified in Section 330, "PRIME, TACK AND FLUSH SEAL COATS," and Section 890, "ASPHALT MATERIAL" of the SDDOT. Bituminous materials shall be liquid asphalt, designation MC-30, or MC-70 at the Contractor's option, except that only MC-30 shall be used on dense graded base courses if MC-70 does not adequately penetrate the base course material. Rate of application shall be not less than 0.15 gallon per square yard nor more than 0.40 gallon per square yard. The prime coat shall be applied only when the ambient temperature is 50° F or above, and when the temperature has not been below 35° F for 12 hours immediately prior to application, unless otherwise directed. The exact quantities, within the range specified, which may be varied to suit field conditions, will be determined by the Contracting Officer. The application temperature for liquid asphalt shall be as directed and shall provide an application viscosity between 20 and 120 centistokes, kinematic, or 10 and 60 seconds, Saybolt-Furol. Application temperatures shall be within the following ranges, except that the appropriate changes should be made when the range of viscosity is raised or lowered:

MC-30.....	85-155 degrees F
MC-70.....	120-190 degrees F

The temperature-viscosity relationship shall be furnished to the Contracting Officer.

3.5.3 BITUMINOUS TACK COAT

Bituminous tack coat shall conform to the requirements specified in Section 330, "PRIME, TACK AND FLUSH SEAL COATS," and Section 890, "ASPHALT MATERIAL" of the SDDOT. Bituminous materials shall be approved by the contracting officer and shall be a liquid emulsion or cutback material.

3.6 PORTLAND CEMENT CONCRETE PAVEMENT

Portland cement concrete pavement shall conform to, and be placed in accordance with, section 380, "PORTLAND CEMENT CONCRETE PAVEMENT" of the SDDOT, except as modified herein. Concrete shall have a minimum flexural strength of 650 psi at 28-days. Coarse aggregate shall conform to section 820, "COARSE AGGREGATE FOR USE IN PORTLAND CEMENT CONCRETE" and shall be coarse aggregate for concrete pavement, size No. 1. Fine aggregate shall meet section 800, "FINE AGGREGATE FOR USE IN PORTLAND CEMENT CONCRETE". [Fly ash may be used in the mix proportioning.] [The use of fly ash shall

not be substituted as a partial replacement of portland cement. The minimum portland cement content, regardless if fly ash is used or not shall be 564 pounds per cubic yard.] Portland cement shall be Type I or II of ASTM C 150 and shall meet the optional requirement for low alkali. The final surface texture shall be a burlap drag finish.

3.6.1 Contractor's Option

At the option of the Contractor, in lieu of developing a new portland cement concrete mix design, the Contractor may use a portland cement concrete mix design which has been used within the last 12 months provided in each instance that the same materials proposed for use on this project are being used, the mix design meets the previously specified criteria, and the mix design and test results are less than 12 months old. Use of this option will permit no changes to aggregate requirements or to other requirements specified in this section and shall not be the basis for additional cost to the Government or extension of time. Data to submit for approval shall be the project name and location, date concrete was placed, type of materials and source location, and actual strength production data from plant produce concrete.

3.6.2 CURING COMPOUND

Curing compound shall meet the requirements in section 821, "CONCRETE CURING MATERIALS". Material shall be a liquid membrane-forming compound.

3.6.3 JOINT SEALING

Joint sealant shall conform to, and be placed in accordance with section 870, "CONCRETE JOINT SEALER"[, except that the sealant shall be jet fuel resistant and meet the requirements as specified ASTM D 3569 or CRD-C 526].

3.7 BASE COURSES AND AGGREGATE SURFACE COURSE

The base course(s) and aggregate surfacing shall conform to and be placed in accordance with the requirements specified in Section 260, "GRANULAR BASES AND SURFACING". [Reclaimed asphalt pavement (RAP) from areas to be removed within the project site or commercially available recycled portland cement concrete (pcc) may also be used for new subbase construction provided [the RAP material or] the recycled pcc conforms to the physical requirements as stated below in paragraph[s]: ["Subbase Course"] ["Aggregate Base Course"] ["Aggregate Surface Course"].] At least one complete series of aggregate [base] [surface] course tests shall be performed in conformance to the SDDOT prior to the start of construction. The base [and subbase] course[s] shall be compacted to a minimum 100% maximum laboratory density.

3.7.1 AGREGGATE BASE COURSE

Base course material shall be "AGGREGATE BASE COURSE", in Section 882, "AGGREGATES FOR GRANULAR BASES AND SURFACING" of the SDDOT except the range for the No. 200 sieve shall be 0-10%.

3.7.2 SUBBASE COURSE

Subbase course shall conform to Section 882, "AGGREGATES FOR GRANULAR BASES AND SURFACING", Type "SUBBASE". [If gravel is used it shall contain a minimum of 75% crushed particles when tested in accordance to CRD-C 171.][The percentage passing the No. 200 sieve shall be within the range of 8% to

15%.] Testing shall be as necessary to demonstrate complete compliance with the requirements of the SDDOT specifications and as specified herein. Prior to placement of the subbase material the subgrade shall be scarified 6 inches and recompact to a minimum 95% maximum laboratory density. The subgrade shall be approved by the contracting officer prior to the placement of subbase course material.

3.7.3 AGGREGATE SURFACE COURSE

Aggregate surface course shall conform to Section 882, "AGGREGATES FOR GRANULAR BASES AND SURFACING," Type "Gravel Surfacing," except that when clay binder is required it shall conform to Section 883, "CLAY."

3.8 PORTLAND CEMENT CONCRETE [[STRUCTURAL,] SIDEWALKS, AND] CURB AND GUTTER

3.8.1 STRUCTURAL CONCRETE

Portland cement concrete shall conform to and be placed in accordance with the requirements specified in Section 460, "STRUCTURAL CONCRETE of the SDDOT.

The aggregate shall conform to section 820, "COARSE AGGREGATE FOR USE IN PORTLAND CEMENT CONCRETE" and shall be coarse aggregate for Class M, Size No. 1 or 3. Fine aggregate shall meet section 800, "FINE AGGREGATE FOR USE IN PORTLAND CEMENT CONCRETE" of the SDDOT. Portland cement shall be approved based on certified mill certificate conforming to the requirements as specified in the SDDOT. All other materials shall conform to section 460.

3.8.2 Sidewalks

Portland cement concrete sidewalk shall conform to and be placed in accordance with the requirements specified in Section 651, "CONCRETE SIDEWALKS", except as modified herein. The portland cement concrete shall be Class M5. At the option of the contractor, the portland cement concrete as required herein above may be used. The aggregate shall conform to section 820, "COARSE AGGREGATE FOR USE IN PORTLAND CEMENT CONCRETE" and shall be coarse aggregate for Class M, size No. 1. Fine aggregate shall meet section 800, "FINE AGGREGATE FOR USE IN PORTLAND CEMENT CONCRETE" of the SDDOT. [The sidewalk shall be constructed to the dimensions as shown in the attached Standard Drawing No. 40-17-01, Sheet 6 for new construction.] Replacement sidewalk shall match existing sidewalk or as directed by the Contracting Officer. Joint Fillers and Joint Sealant shall be approved based on certified test results. The joint sealant shall be either a hot pour or a silicone and placed in accordance to Section 870 in the SDDOT. At the end of the curing period, expansion [and contraction] joints shall be carefully cleaned and filled with joint sealer. Joints shall be filled with sealer and recessed from the concrete surface 1/8-inch and in such manner as to minimize spilling on the adjacent surface. Spilled sealing material shall be removed immediately and the surface of the sidewalk cleaned.

3.8.3 Curb and Gutter

Portland cement concrete curb and gutter shall conform to and be placed in accordance with the requirements specified in Section 650, "CONCRETE CURB AND GUTTER" of the SDDOT, except as modified herein. [The Portland cement concrete curb and gutter shall be constructed to the dimensions as shown in the attached Standard Drawing No. 40-17-01, Sheet 1 for new construction.]

Replacement of curb and gutter shall match the existing curb and gutter or as directed by the Contracting Officer.] The portland cement concrete

shall be Class M5 and meet section 462, "CONCRETE FOR INCIDENTAL CONSTRUCTION - CLASS M". At the option of the contractor, portland cement concrete pavement as required herein above may be used. The aggregate shall conform to section 820, "COARSE AGGREGATE FOR USE IN PORTLAND CEMENT CONCRETE" and shall be coarse aggregate for Class M, size No. 1. Fine aggregate shall meet section 800, "FINE AGGREGATE FOR USE IN PORTLAND CEMENT CONCRETE" of the SDDOT. Joint Fillers and Joint Sealant shall be approved based on certified test results conforming to Section 650. At the end of the curing period, expansion [and contraction] joints shall be carefully cleaned and filled with joint sealer. Joints shall be filled with sealer and recessed from the concrete surface 1/8-inch and in such manner as to minimize spilling on the adjacent surface. Spilled sealing material shall be removed immediately and the surface of the curb and gutter.

3.9 GEOTEXTILE

In lieu of placing a geotextile beneath the base course for portland cement concrete pavement as specified in Section [____], the contractor may use a minimum of 4 inches of subbase course material as specified in paragraph SUBBASE COURSE. Use of this option requires that the material and placement of the subbase course conform to the requirements as specified.

3.10 UNDERLYING COURSE

The underlying course after removal of the base course material and installation of the trench drain shall be scaified 6 inches and recompacted to 95% of the laboratory maximum density.

3.11 SAMPLING AND TESTING

All quality control sampling and testing shall be the responsibility of the Contractor and shall be performed at no additional cost to the Government in accordance with Section 01451A CONTRACTOR QUALITY CONTROL and as specified herein. Sampling and testing shall be performed by an approved testing laboratory at the expense of the Contractor and shall be in accordance as defined herein and/or in the DOT. At least 15 working days prior to commencing construction, the Contractor shall submit for approval the aggregate base course tests results, and [the job mix formula plus aggregate tests results, the portland cement concrete mix design for airfield pavement, sidewalk, and curb and gutter] showing that all requirements specified herein and in the SDDOT are met. Any portion of the work not in conformance as described herein or on the drawings shall be removed and replaced at no additional cost to the .

3.11.1 In-Place Tests

3.11.1.1 Base Courses, Surface Courses, and Underlying Course

One of each of the following tests shall be performed on samples taken from the placed and compacted base and aggregate surface courses. Samples shall be taken for each 1000 square yards or less of each layer placed.

Sieve Analysis (Subbase, Base, and Surface Course)

Field Density and Moisture

Liquid-Limit and Plasticity-Index

3.11.2 Compaction

3.11.2.1 Base Courses, Surface Courses, and Underlying Course

Laboratory maximum density of new aggregate base and surface courses [and salvaged base] [and underlying course] shall be determined in accordance with ASTM D 1557, Procedure C. Density shall be measured in the field in accordance with ASTM D 1556. All base and aggregate surface courses shall be compacted to at least 100 percent of laboratory maximum density and underlying course to 95 percent of laboratory maximum density.

3.11.2.2 Bituminous Surface Course

Density of the compacted mixture of the surface course shall be a minimum of 97% and a maximum of 100% (95%-100% along joints) of the maximum field laboratory compacted density. At the option of the Contractor densities of the compacted mixture may be determined by the nuclear method in accordance with ASTM D 2950 for contractor quality control purposes. In any event, the basis of acceptance for density shall be determined from the specific gravity method as stated below.

3.11.3 Portland Cement Concrete

One of each of the following tests shall be performed on samples taken at the location of placement. Samples shall be taken every two hours during the actual placement of concrete [half day] or as directed by the Contracting Officer.

PCC (Portland Cement Concrete) air content and slump
PCC cylinders (Cast three specimens for testing at 28 days)
PCC Thickness - Two cores (Min. 4 inch Diameter) at two randomly selected areas within the paving limits and as determined by the Contracting Officer.

3.11.4 Bituminous Mixtures

Samples of plant mixtures shall be taken at the start-up of the laydown operations each day and before the material is placed in the pavement. The sample shall be tested to determine conformance with the specified [Hveem][Marshall] test properties for bituminous mixtures and to determine bitumen content and aggregate gradation.

3.11.4.1 Testing Frequency

a. [Hveem][Marshall] Tests

One set (three specimens) of tests shall be made for each 300 tons or less of bituminous mixture placed each day.

b. Extraction Tests.

Extraction tests shall be made to determine bitumen content and aggregate gradation at the same frequency specified above for Marshall tests.

c. Immersion Compression Tests.

One set of tests shall be made for the first day's construction and thereafter whenever there is any change in materials or job-mix formula.

3.11.4.2 Sampling Bituminous Pavements

Testing and sampling of the finished pavement, shall be performed by the Contractor. The location of the core samples shall be near the plant samples taken for [Hveem][Marshall] property determination, extraction and gradation and as directed by the Contracting Officer. The cores shall be at least 4 inches in diameter. The samples shall be tested by the Contractor to determine conformance to density, voids and thickness. Specimens shall be tested in accordance with the requirements of [CRD-C 650][ASTM D 2726]. Three samples shall be taken and tested for each 300 tons or less of bituminous mixture placed each day. At least one sample shall be taken from the longitudinal joint. The grade of the completed surface shall not deviate more than 0.05 foot from the plan grade. The finished surface when tested with a 12 foot straight edge shall not deviate from the surface by more than 1/4 inch. The straight edge shall be laid every 25 feet parallel and perpendicular to the paving lane centerline.

-- End of Section --

ATTACHMENT NO. 27

**BASE CIVIL ENGINEERING WORK CLEARANCE
REQUEST (AF FORM 103)**

**THIS FORM IS ATTACHED TO SECTION 00800 SPECIAL
CONTRACT REQUIREMENTS OF THE SOLICITATION
CD-ROM**

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ATTACHMENT NO. 28

NOT USED

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ATTACHMENT NO. 29

REFERENCES

1. UNDER THE FOLDER LABELED "REFERENCES" ON THE CD-ROM ARE ADOBE ACROBAT COPIES OF SELECT AIR FORCE MANUALS (AFJMAN), UNIFIED FACILITIES CRITERIA (UFC) DOCUMENTS, AIR FORCE INSTRUCTIONS (AFI), TECHNICAL INSTRUCTIONS (TI), AIR FORCE HANDBOOKS (AFH), TECHNICAL MANUALS (TM), AND ENGINEERING MANUALS (EM). THIS FOLDER IS A REFERENCE LIBRARY AND MAY CONTAIN INFORMATION NOT APPLICABLE TO THIS PROJECT. THIS FOLDER WAS CREATED TO SAVE TIME IN LOCATING MANY OF THE REFERENCES REFERRED TO IN THIS SOLICITATION.
2. UNDER FOLDER LABELED "ETL" ON THE CD-ROM ARE ADOBE ACROBAT FILES OF VARIOUS ENGINEERING TECHNICAL LETTERS (ETL'S) REFERRED TO IN THIS RFP.

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ATTACHMENT NO. 30

O&M OPTION - COMPREHENSIVE INTERIOR DESIGN

**COPY ON CD-ROM
(ACCESSIBLE FROM CD-ROM CONTRACT VIEWER)**

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ATTACHMENT NO. 31

O&M OPTION – EQUIPMENT

**COPY ON CD-ROM
(ACCESSIBLE FROM CD-ROM CONTRACT VIEWER)**

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**Project: 37th B1-B Squadron Operations Facility
Ellsworth AFB, SD
PN FXBM993001**

Appliance / Electronics – Option

Table of Contents

Table of Contents

Narrative of Appliance / Electronics Objectives

Appliance / Electronics Placement Floor Plans

Appliances / Electronics Illustration Sheets

Itemized Cost Estimate

Order Data Sheets

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ATTACHMENT 32 PART A
NARRATIVE OF APPLIANCE/ELECTRONICS OBJECTIVES

Project: 37th Bomb Squadron Operations Facility
Ellsworth AFB, SD
PN FXBM993001

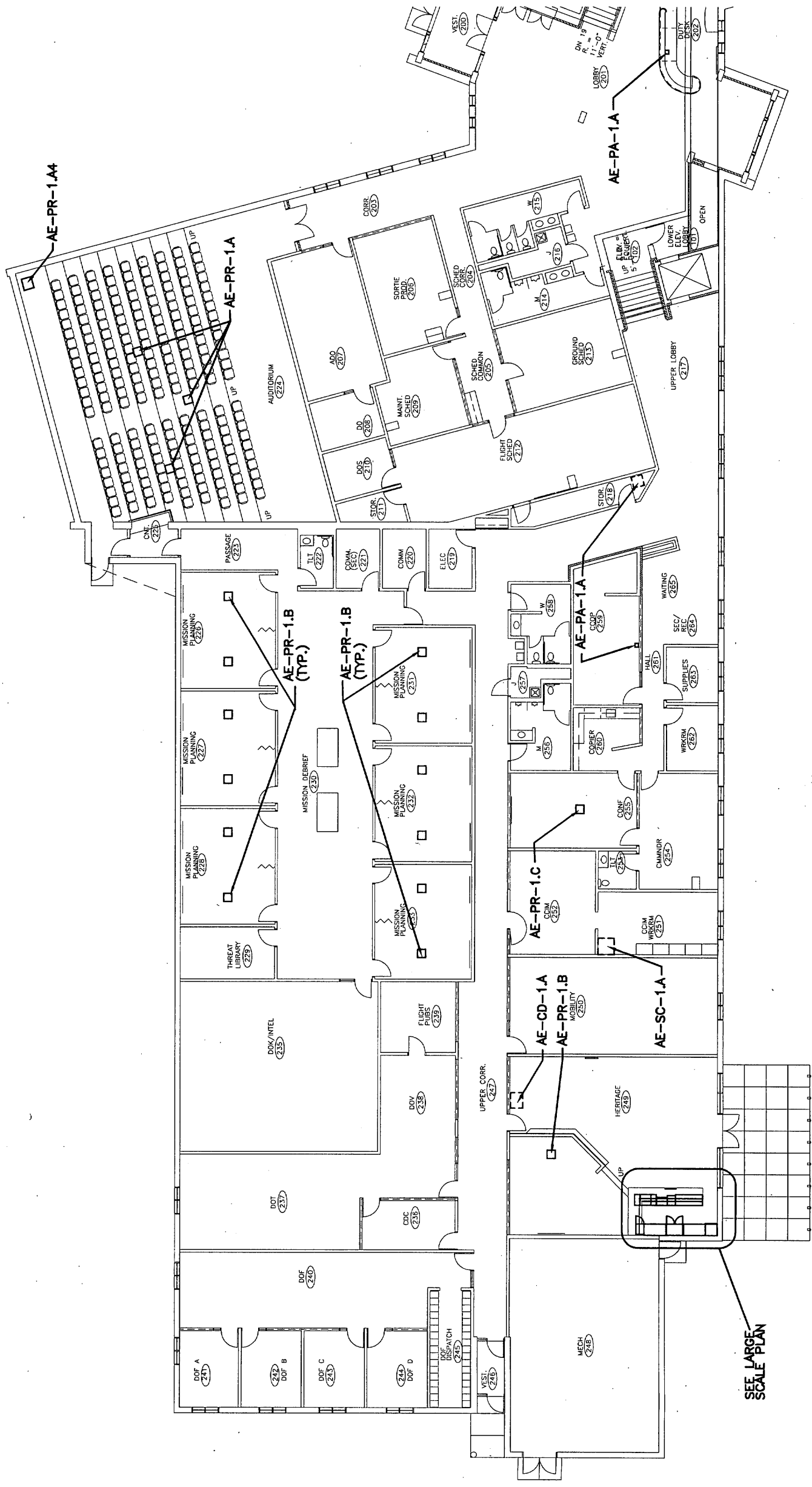
Objectives for the Appliance/Electronics Package

The objective of the Appliance/Electronics Package for the 37th B-1B Bomber Squadron Operations Facility is to provide a portfolio of items to coordinate with the furniture, Equipment and building design efforts and to create a finished environment intended to increase individual and organizational performance and efficiency. The items in the A/E package include those that are to be procured outside the MILCON funding and need to be accounted for in the design process.

The new building will accommodate primarily four groups, Command Section, Operations, Life Support and Maintenance. The upper level houses the Command section and most of the Operations functions, the mid-level contains the Ops desk, DO, and Scheduling offices and the lower level has the Life Support and Maintenance functions.

Electronic systems have been selected to work with existing base systems where necessary. Appliances have been selected to meet the users requirements. The items meet the durability and aesthetic requirements of the overall project.

The appliance finishes will coordinate with the building finishes and architecture to present an aesthetic and efficient environment.



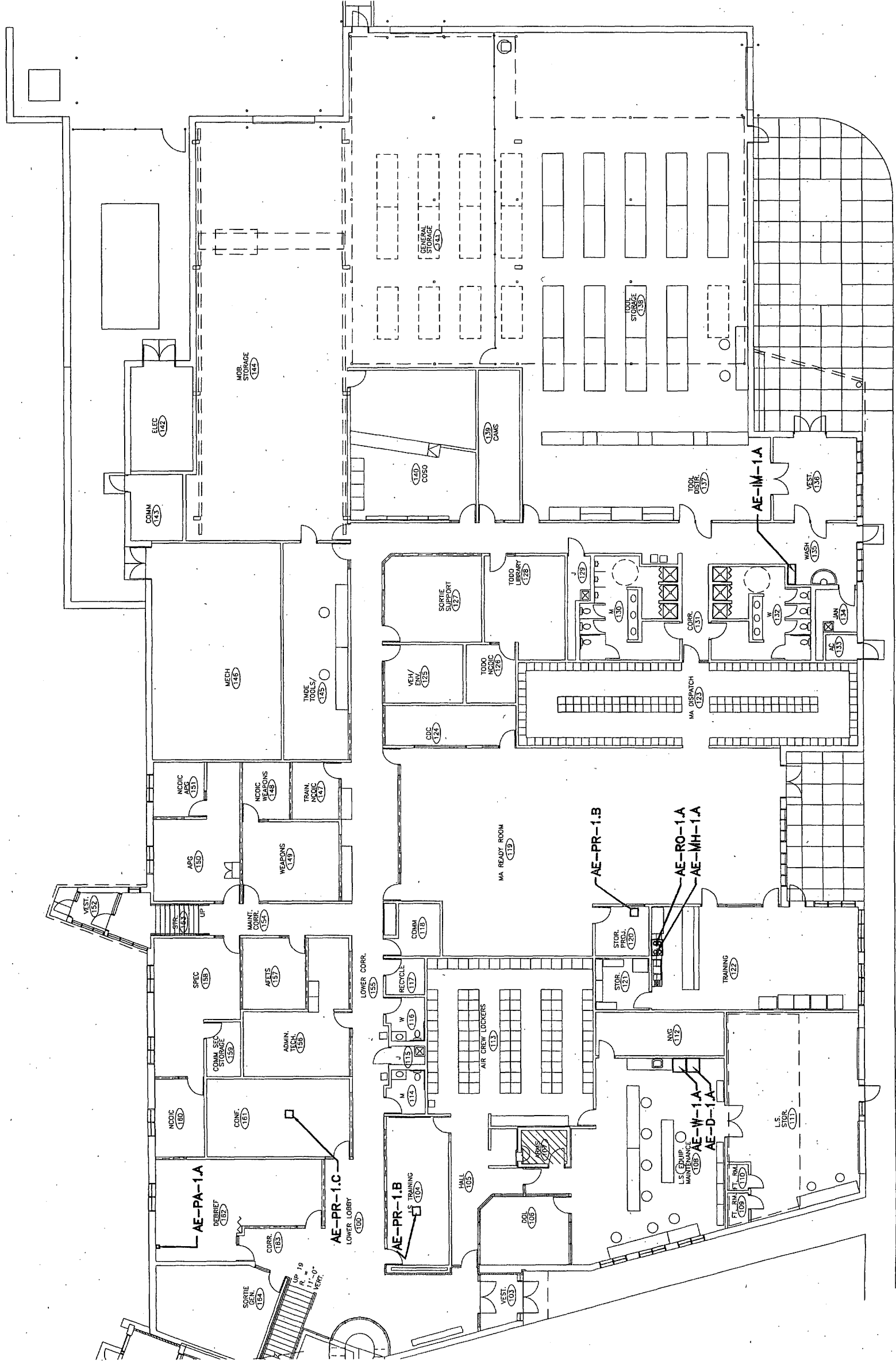
APPLIANCE/ELECTRONICS PLAN UPPER LEVEL - AREA A

20' 10' 0 20'

SCALE: 3/64" = 1'-0"



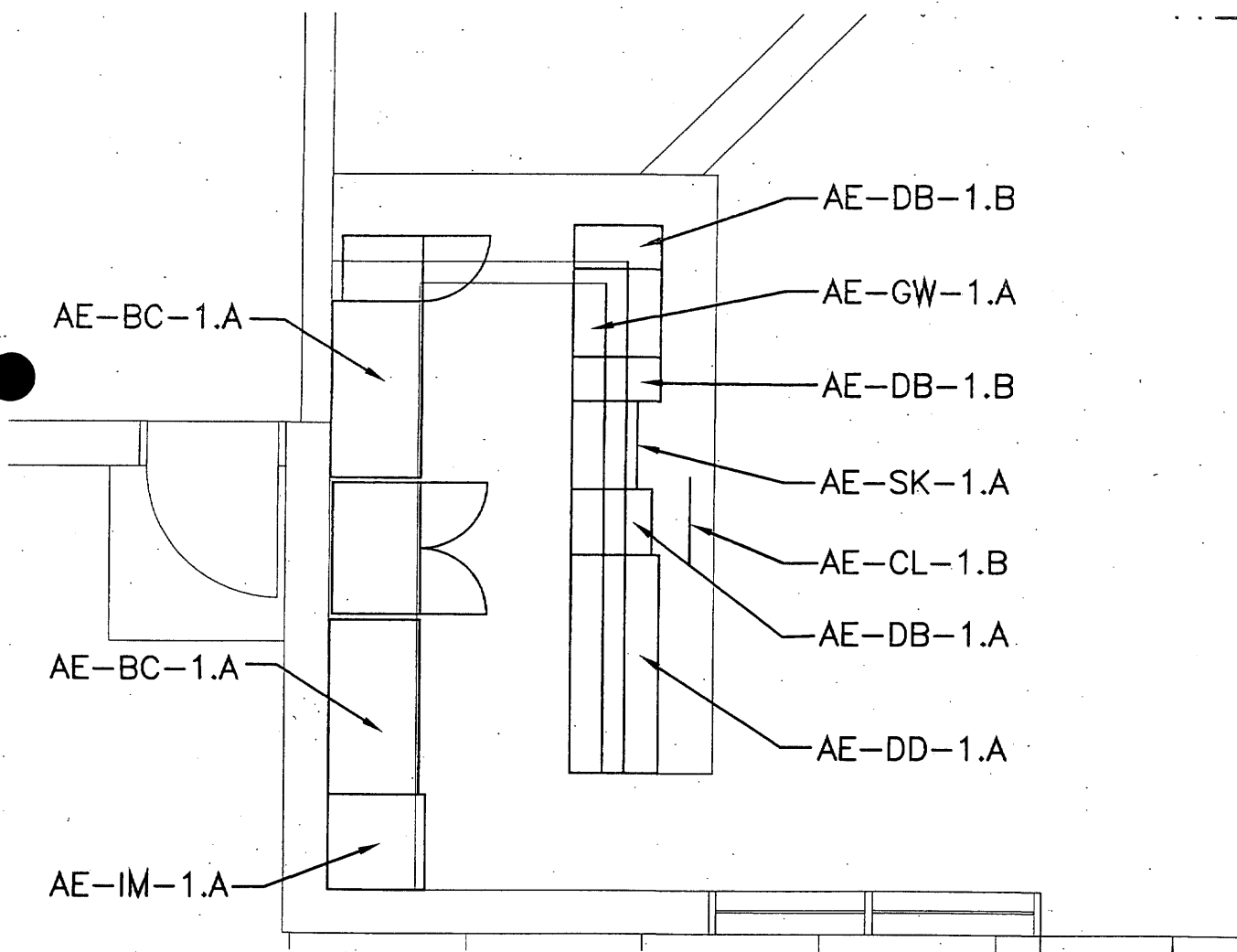
ATTACHMENT 32, PART B
APPLIANCE/ELECTRONICS PLACEMENT FLOOR PLANS



APPLIANCE/ELECTRONICS PLAN LOWER LEVEL - AREA B

0 10' 20' SCALE: 3/84" = 1'-0"

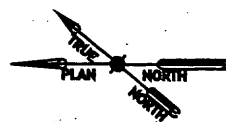




APPLIANCE/ELECTRONICS PLAN - HERITAGE ROOM

2' 1' 0' 2'

SCALE: 1/4" = 1'-0"



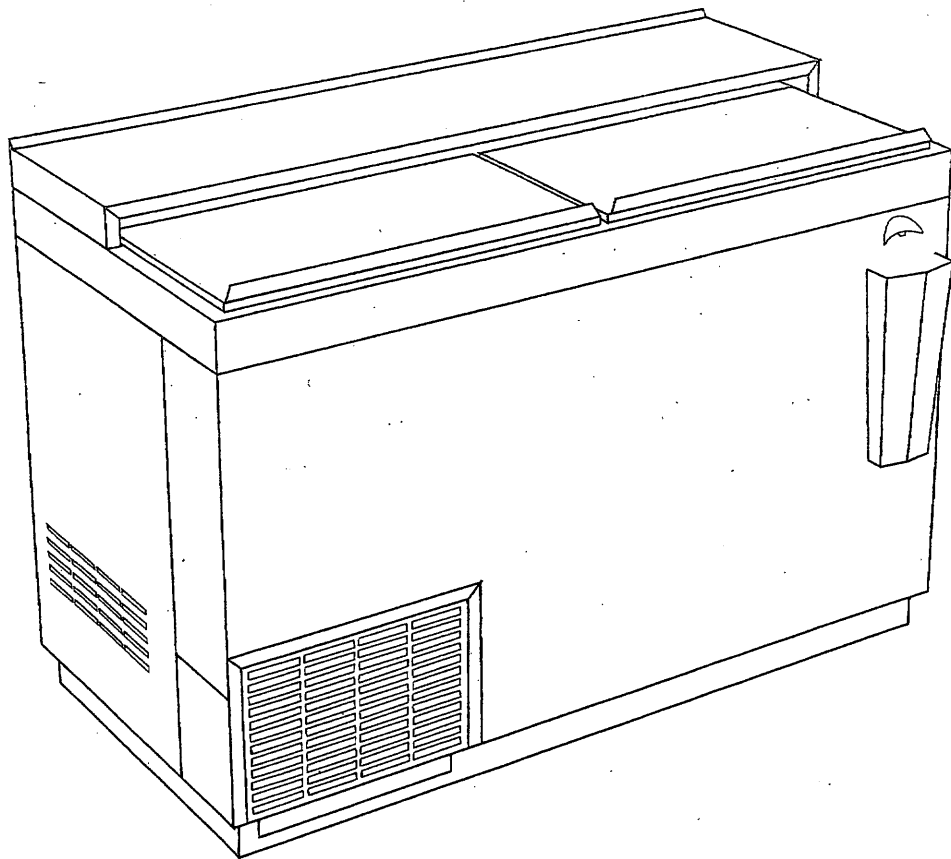
ATTACHMENT 32, PART C
APPLIANCE/ELECTRONICS ILLUSTRATION SHEETS

Project: 37th Bomb Squadron Operations Facility
Ellsworth AFB, SD
PN FXBM993001

Appliances/Electronics Illustration Sheet

Item Code: AE - BC - 1.A

Item Name: Flat Top Bottle Cooler

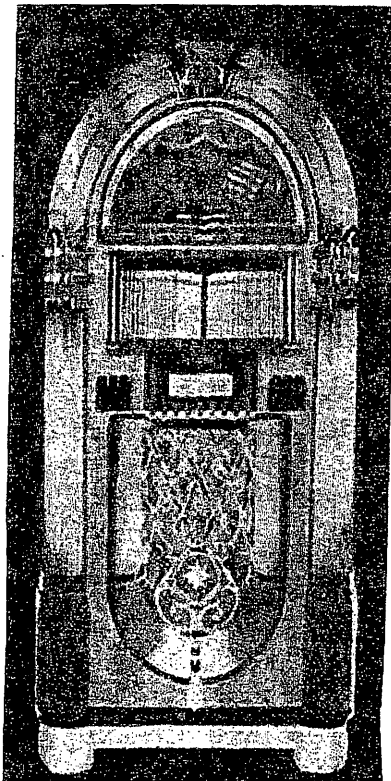


Project: 37th Bomb Squadron Operations Facility
Ellsworth AFB, SD
PN FXBM993001

Appliances/Electronics Illustration Sheet

Item Code: AE - CD - 1.A

Item Name: CD Player

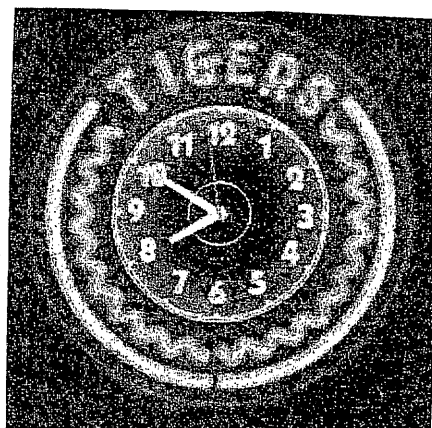


Project: 37th Bomb Squadron Operations Facility
Ellsworth AFB, SD
PN FXBM993001

Appliances/Electronics Illustration Sheet

Item Code: AE - CL - 1.A

Item Name: Tiger Clock



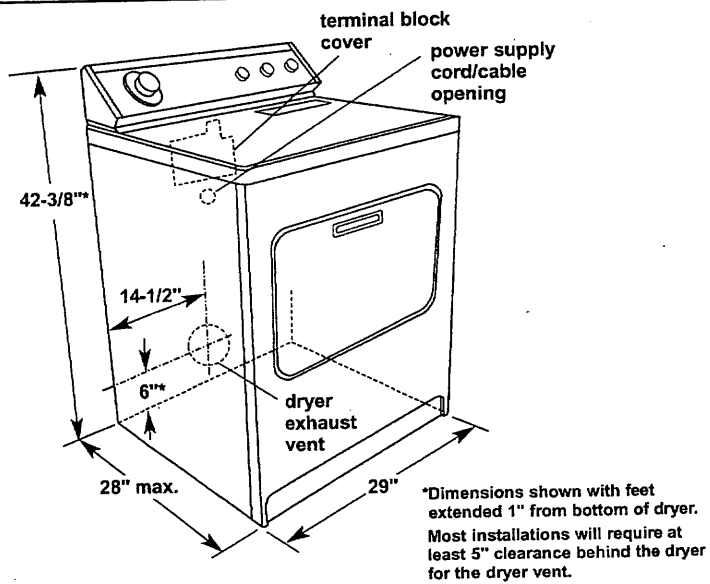
Project: 37th B-1B Bomber Squadron Operations Facility
Ellsworth AFB, SD
PN FXBM-993001

Appliances/Electronics Illustration Sheet

Item Code: AE-D-1.A

Item Name: Dryer

OVERALL DIMENSIONS

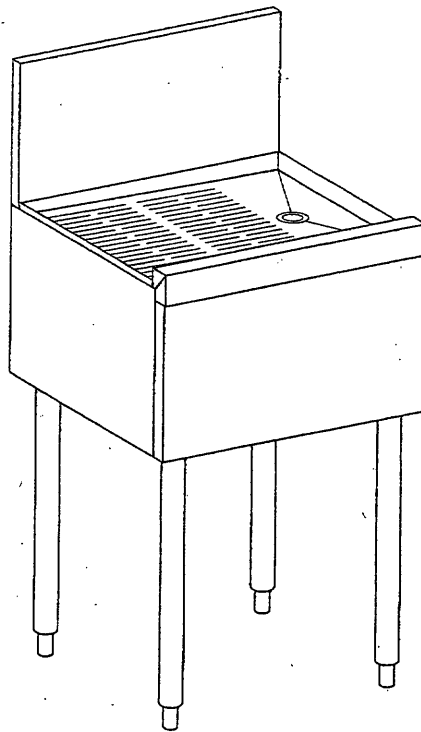


Project: 37th Bomb Squadron Operations Facility
Ellsworth AFB, SD
PN FXBM993001

Appliances/Electronics Illustration Sheet

Item Code: AE - DB - 1.A & B

Item Name: Drainboard

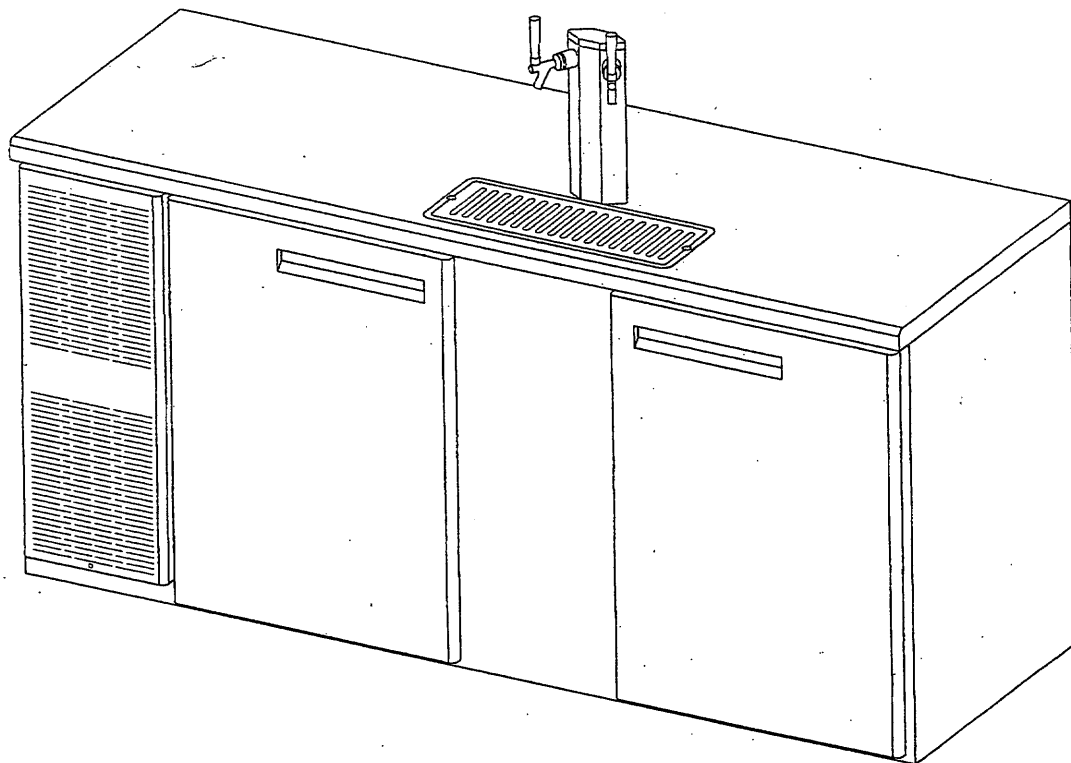


Project: 37th Bomb Squadron Operations Facility
Ellsworth AFB, SD
PN FXBM993001

Appliances/Electronics Illustration Sheet

Item Code: AE - DD - 1.A

Item Name: Self-contained direct draw dispenser

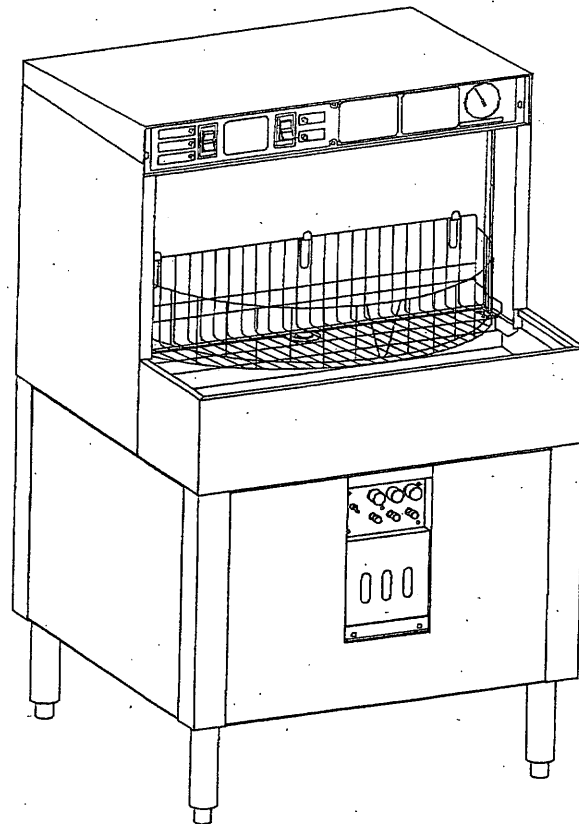


Project: 37th Bomb Squadron Operations Facility
Ellsworth AFB, SD
PN FXBM993001

Appliances/Electronics Illustration Sheet

Item Code: AE - GW - 1.A

Item Name: Glasswasher

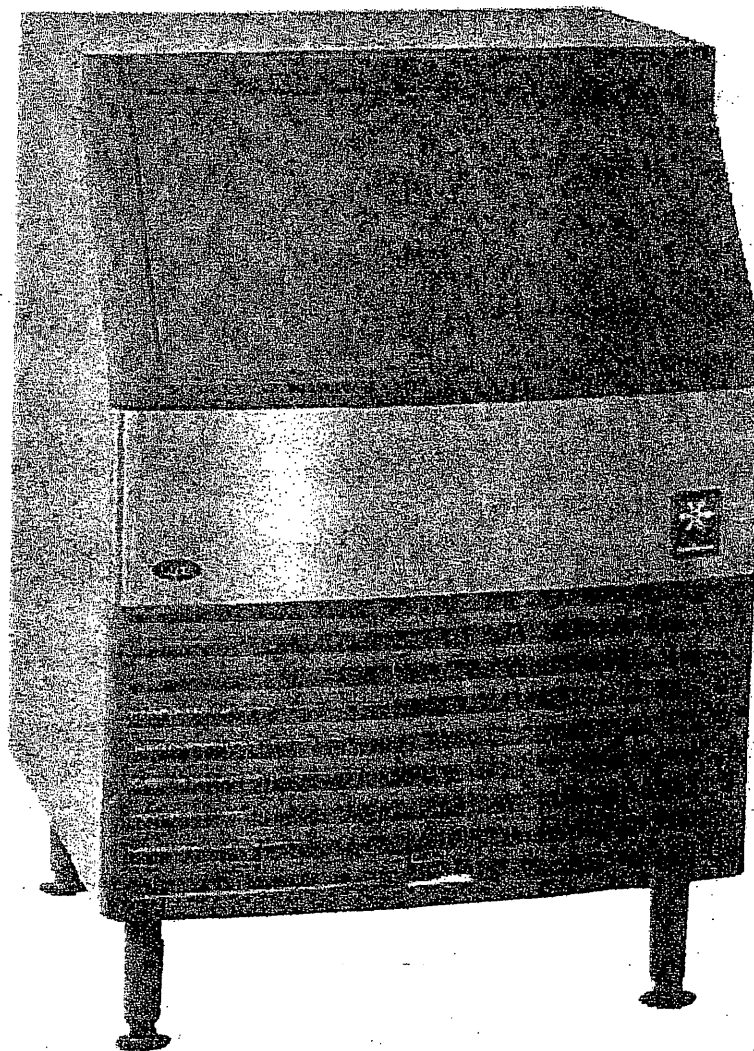


Project: 37th Bomb Squadron Operations Facility
Ellsworth AFB, SD
PN FXBM993001

Appliances/Electronics Illustration Sheet

Item Code: AE - IM - 1.A

Item Name: Ice maker

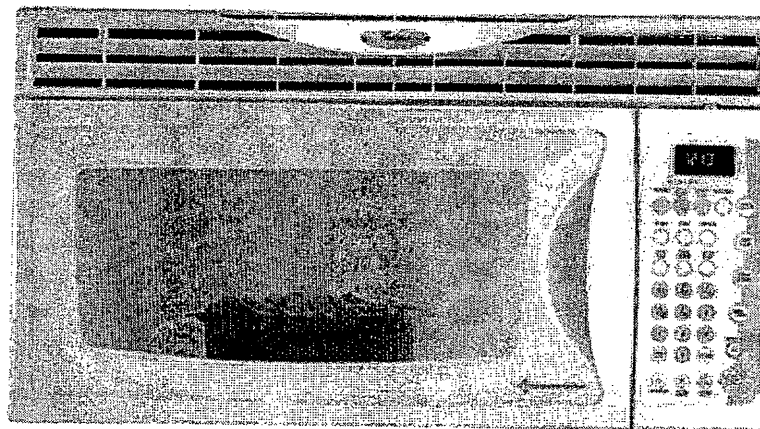


Project: 37th B-1B Bomber Squadron Operations Facility
Ellsworth AFB, SD
PN FXBM-993001

Appliances/Electronics Illustration Sheet

Item Code: AE-MH-1.A

Item Name: HOOD/MICROWAVE



**WHIRLPOOL GOLD® MICROWAVE HOOD COMBINATION WITH
PREFERRED FEATURES**

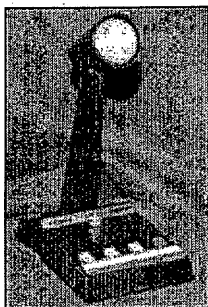
Project: 37th B-1B Bomber Squadron Operations Facility
Ellsworth AFB, SD
PN FXBM-993001

Appliances/Electronics Illustration Sheet

Item Code: AE-PA-1.A

Item Name: Public Address System

Paging Station Microphone

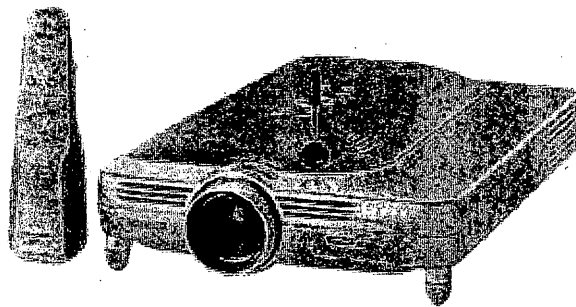


Project: 37th Bomb Squadron Operations Facility
Ellsworth AFB, SD
PN FXBM993001

Appliances/Electronics Illustration Sheet

Item Code: AE - PR - 1.A1

Item Name: Projector/AV System

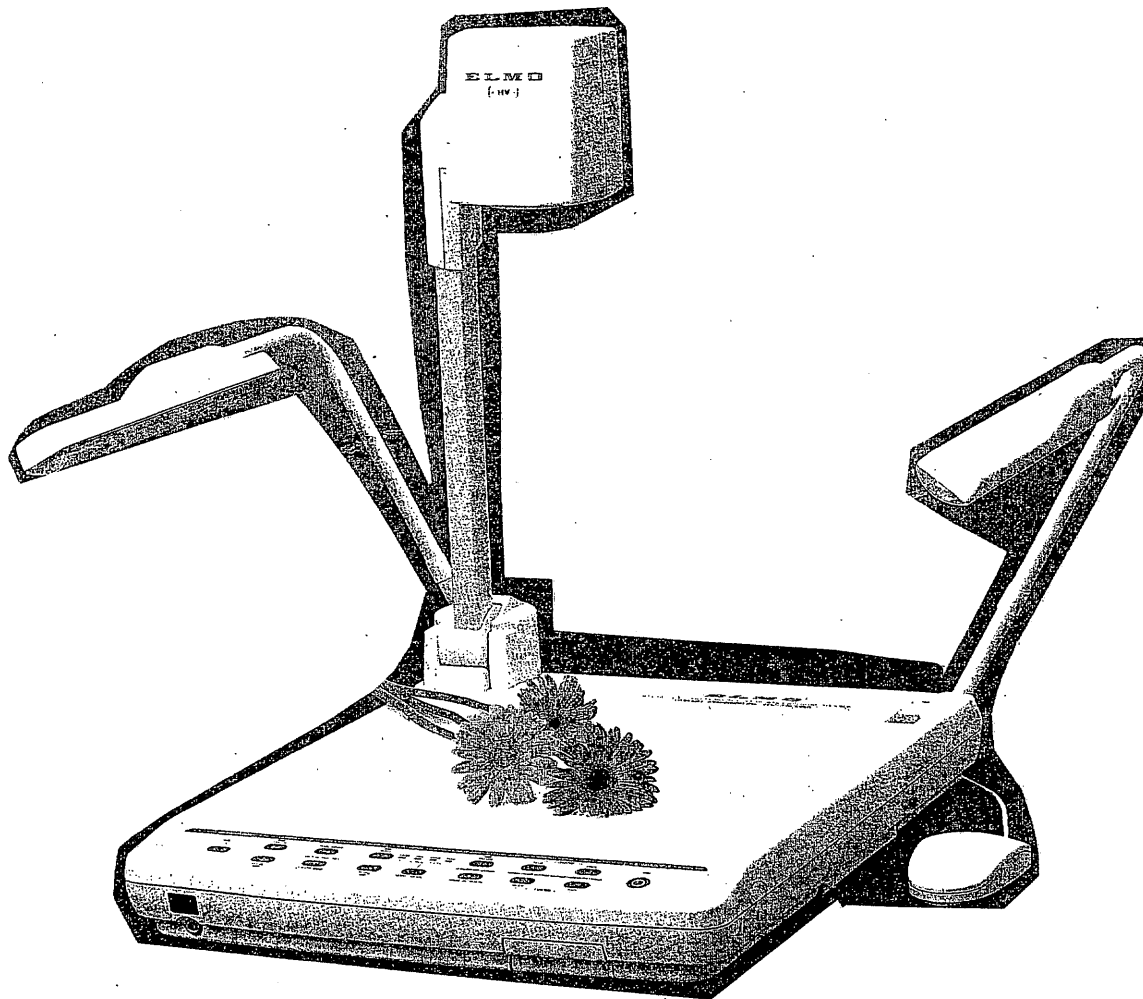


Project: 37th Bomb Squadron Operations Facility
Ellsworth AFB, SD
PN FXBM993001

Appliances/Electronics Illustration Sheet

Item Code: AE - PR - 1.A2

Item Name: AV System Misc. Components – Progressive scan high-resolution presenter

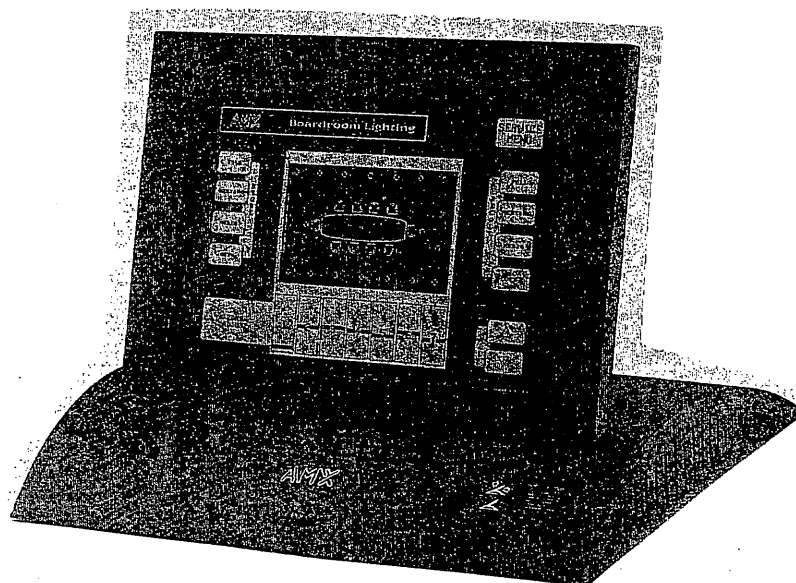


Project: 37th Bomb Squadron Operations Facility
Ellsworth AFB, SD
PN FXBM993001

Appliances/Electronics Illustration Sheet

Item Code: AE - PR - 1.A3

Item Name: AV System Misc. Components – Electroluminescent touch panel

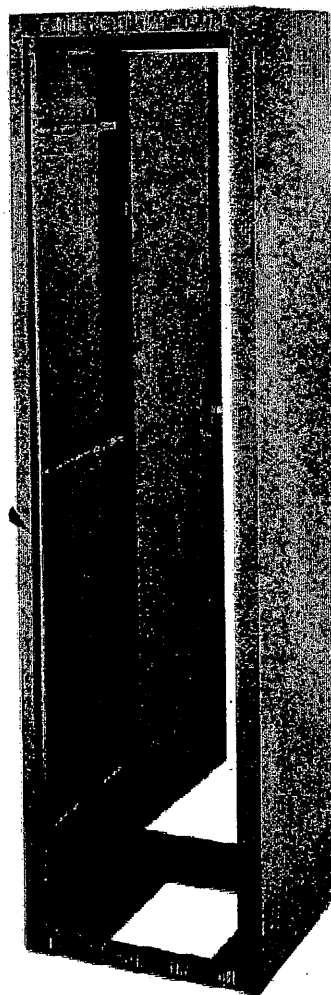


Project: 37th Bomb Squadron Operations Facility
Ellsworth AFB, SD
PN FXBM993001

Appliances/Electronics Illustration Sheet

Item Code: AE - PR - 1.A4

Item Name: AV System Misc. Components – Stand-alone enclosure

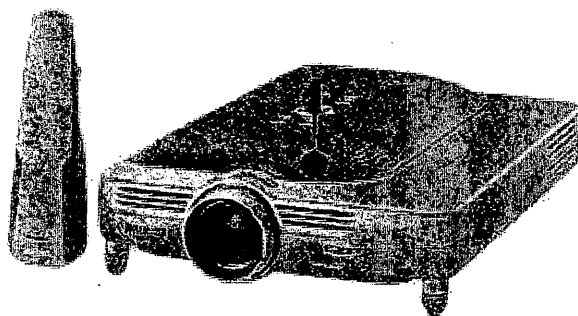


Project: 37th Bomb Squadron Operations Facility
Ellsworth AFB, SD
PN FXBM993001

Appliances/Electronics Illustration Sheet

Item Code: AE - PR - 1.B &C

Item Name: Projector/AV System

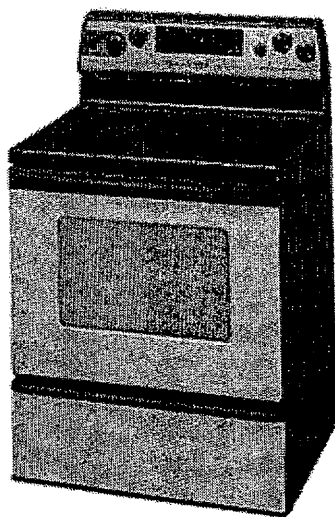


Project: 37th B-1B Bomber Squadron Operations Facility
Ellsworth AFB, SD
PN FXBM-993001

Appliances/Electronics Illustration Sheet

Item Code: AE-RO-1.A

Item Name: RANGE/OVEN

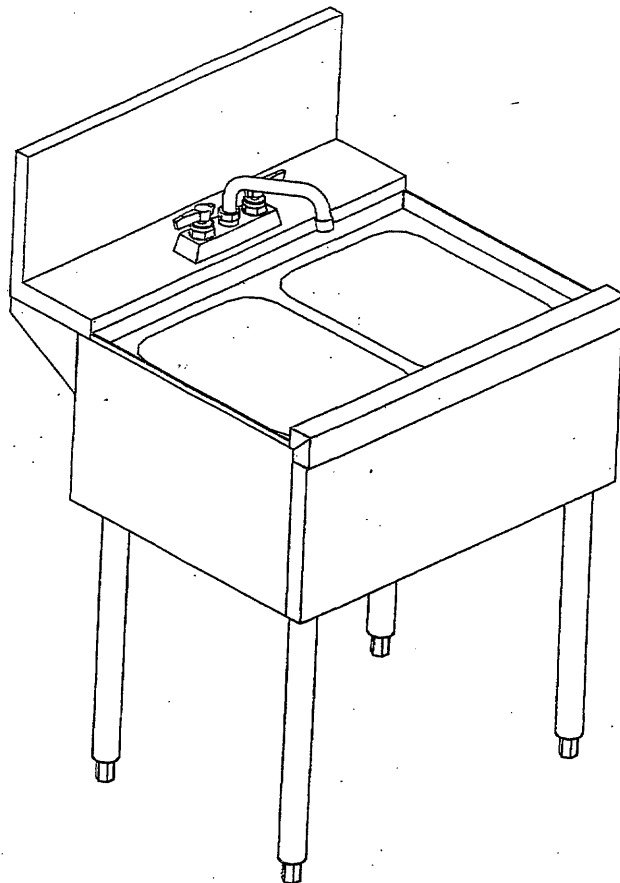


Project: 37th Bomb Squadron Operations Facility
Ellsworth AFB, SD
PN FXBM993001

Appliances/Electronics Illustration Sheet

Item Code: AE - SK - 1.A

Item Name: Two Tank Sink

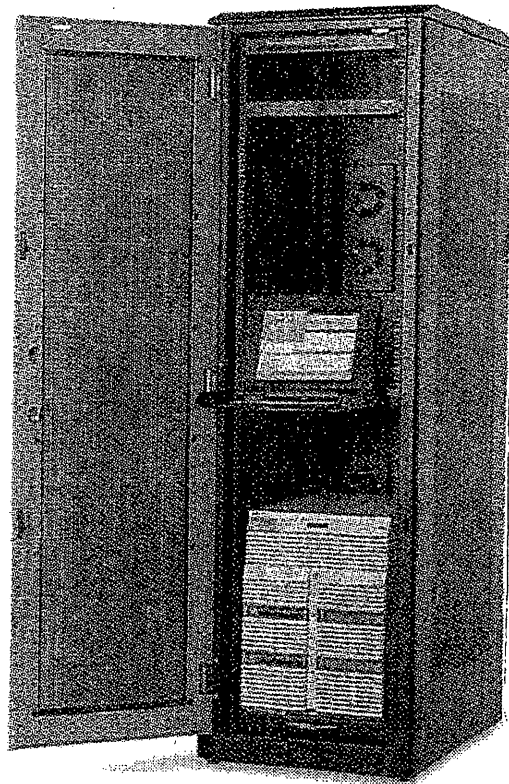


Project: 37th Bomb Squadron Operations Facility
Ellsworth AFB, SD
PN FXBM993001

Appliances/Electronics Illustration Sheet

Item Code: AE - SC - 1.A

Item Name: Server Cabinet

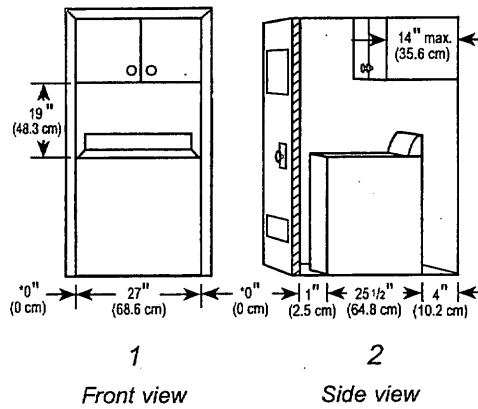


Project: 37th B-1B Bomber Squadron Operations Facility
Ellsworth AFB, SD
PN FXBM-993001

Appliances/Electronics Illustration Sheet

Item Code: AE-W-1.A.

Item Name: Washer



ATTACHMENT 32 (PART D)

O & M OPTION – APPLIANCES AND ELECTRONICS

ORDER DATA SHEETS

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<u>2</u>	<u>ITEM CODES: AE- CD-1.A</u>	<u>4</u>
	ITEM NAME: CD PLAYER	4
<u>3</u>	<u>ITEM CODES: AE- CL-1.A</u>	<u>5</u>
	ITEM NAME: CLOCK	5
<u>4</u>	<u>ITEM CODE: AE-D-1.A</u>	<u>6</u>
	ITEM NAME: DRYER	6
<u>5</u>	<u>ITEM CODES: AE- DB-1.A</u>	<u>7</u>
	ITEM NAME: DRAINBOARD	7
<u>6</u>	<u>ITEM CODES: AE- DB-1.B</u>	<u>8</u>
	ITEM NAME: DRAINBOARD	8
<u>7</u>	<u>ITEM CODES: AE- DD-1.A</u>	<u>9</u>
	ITEM NAME: SELF-CONTAINED DIRECT DRAW DISPENSER	9
<u>8</u>	<u>ITEM CODES: AE- GW-1.A</u>	<u>10</u>
	ITEM NAME: GLASSWASHER	10
<u>9</u>	<u>ITEM CODES: AE- IM-1.A</u>	<u>11</u>
	ITEM NAME: ICEMAKER	11

<u>10</u>	<u>ITEM CODE: AE-MH-1.A</u>	<u>12</u>
	ITEM NAME: HOOD/MICROWAVE	12
<u>11</u>	<u>ITEM CODE: AE-PA-1.A</u>	<u>13</u>
	ITEM NAME: PUBLIC ADDRESS SYSTEM	13
<u>12</u>	<u>ITEM CODES: AE- PR-1.A</u>	<u>14</u>
	ITEM NAME: PROJECTOR/AUDIO VIDEO SYSTEM	14
<u>13</u>	<u>ITEM CODES: AE- PR-1.B</u>	<u>16</u>
	ITEM NAME: PROJECTOR/AUDIO VIDEO SYSTEM	16
<u>14</u>	<u>ITEM CODES: AE- PR-1.C</u>	<u>17</u>
	ITEM NAME: PROJECTOR/AUDIO VIDEO SYSTEM	17
<u>15</u>	<u>ITEM CODE: AE-RO-1.A</u>	<u>18</u>
	ITEM NAME: RANGE/OVEN	18
<u>16</u>	<u>ITEM CODES: AE-SC-1.A</u>	<u>19</u>
	ITEM NAME: SERVER CABINET	19
<u>17</u>	<u>ITEM CODES: AE-SK-1.A</u>	<u>20</u>
	ITEM NAME: SINK	20
<u>18</u>	<u>ITEM CODE: AE-W-1.A</u>	<u>21</u>
	ITEM NAME: WASHER	21

Project: 37th B1-B Squadron Operations Facility
Ellsworth AFB, SD
PN FXBM993001

PROCUREMENT INFORMATION

1 Item Codes: AE- BC-1.A

Item Name: Flat Top Bottle Cooler

Manufacturer:
Perlick Corporation
8300 West Hope RD
Milwaukee, WI 53224
800-558-5592

GSA Contract number: NA
Contract expiration date: NA
FSC Group: NA
SIN: NA
MOL: NA

Model Name: Flat Top Bottle Cooler

Model Number: 7260E

Dimensions: 48''w x 24 ¾''d

Finish Name/Number: Stainless steel

Fabric Name/Number: NA

Description: Adjustable vinyl coated wire partitions, walls and bottom galvanized steel, stainless steel top and sliding doors, heavy duty doors w/ integral handles and locks, removable fronts and rear grilles

Memo:

Room Location: RM 249

Special instructions: Installation not included

Project: 37th B1-B Squadron Operations Facility
Ellsworth AFB, SD
PN FXBM993001

PROCUREMENT INFORMATION

2 Item Codes: AE- CD-1.A

Item Name: CD Player

Manufacturer:
Game Room Antiques
909 26 Street NW
Washington DC 20036
202-338-1342

GSA Contract number: NA
Contract expiration date: NA
FSC Group: NA
SIN: NA
MOL: NA

Model Name: Bubbler CD Jukebox

Model Number: NA

Dimensions: 60”h x 33”w x 27”d

Finish Name/Number: NA

Fabric Name/Number: NA

Description: All metal pieces are die cast metal, triple plated with copper and nickel and highly polished chrome, 100 CD magazines, dual amp w/ surround sound and dual equalizers, 360 watt RMS power, 810 music power, 5 speakers, dual three-way system for live performance reproduction Phillips CD player w/ automatic disc mapping and self adjusting laser

Memo:

Room Location: RM 249

Special instructions: Installation not included

PROCUREMENT INFORMATION

3 Item Codes: AE- CL-1.A

Item Name: Clock

Manufacturer:
Lumichron
510 Leonard NW
Grand Rapids, MI 49504
616-774-2869

GSA Contract number: NA
Contract expiration date: NA
FSC Group: NA
SIN: NA
MOL: NA

Model Name: Custom Neon Tiger Clock

Model Number: NA

Dimensions: 20" diameter

Finish Name/Number: Neon colors: text- orange, outside - green, inside – orange, dial illumination - green

Fabric Name/Number: NA

Description: Neon clock to include neon zig-zag, variable dimming, and acrylic cover

Memo:

Room Location: RM 249

Special instructions: Installation not included

Project: 37th B1-B Squadron Operations Facility
Ellsworth AFB, SD
PN FXBM993001

PROCUREMENT INFORMATION

4 Item Code: AE-D-1.A

Item Name: Dryer

Manufacturer: Whirlpool

Model Number: GEW9878L (electric)

Dimensions: 29" x 30" x 43"

Finish Name/Number: White

Description: Electric Dryer

Item Location: Room 108 Life Support E.M.

Special Instructions: Provide Venting and Electrical connections as req'd.

PROCUREMENT INFORMATION

5 Item Codes: AE- DB-1.A

Item Name: Drainboard

Manufacturer:
Perlick Corporation
8300 West Hope RD
Milwaukee, WI 53224
800-558-5592

GSA Contract number: NA
Contract expiration date: NA
FSC Group: NA
SIN: NA
MOL: NA

Model Name: Drainboard

Model Number: TSD18

Dimensions: 18 9/16"D X 18"W

Finish Name/Number: Stainless steel

Fabric Name/Number: NA

Description: All stainless steel, backsplash 8"h w/ 1" return at top, mechanically fastened and sealed w/ steel support brackets, drainboard 16" deep 1/4" radius w/ balled corners.

Memo:

Room Location: RM 249

Special instructions: Installation not included

Project: 37th B1-B Squadron Operations Facility
Ellsworth AFB, SD
PN FXBM993001

PROCUREMENT INFORMATION

6 Item Codes: AE- DB-1.B

Item Name: Drainboard

Manufacturer:
Perlick Corporation
8300 West Hope RD
Milwaukee, WI 53224
800-558-5592

GSA Contract number: NA
Contract expiration date: NA
FSC Group: NA
SIN: NA
MOL: NA

Model Name: Drainboard

Model Number: TSD12

Dimensions: 18 9/16"D X 12"W

Finish Name/Number: Stainless steel

Fabric Name/Number: NA

Description: All stainless steel, backsplash 8"h w/ 1" return at top, mechanically fastened and sealed w/ steel support brackets, drainboard 16" deep 1/4" radius w/ balled corners.

Memo:

Room Location: RM 249 Quantity 2

Special instructions: Installation not included

PROCUREMENT INFORMATION

7 Item Codes: AE- DD-1.A

Item Name: Self-contained direct draw dispenser

Manufacturer:
Perlick Corporation
8300 West Hope RD
Milwaukee, WI 53224
800-558-5592

GSA Contract number: NA
Contract expiration date: NA
FSC Group: NA
SIN: NA
MOL: NA

Model Name: Self-contained direct draw dispenser

Model Number: DS2KS

Dimensions: 60”w x 24”d x 34”h

Finish Name/Number: Stainless steel

Fabric Name/Number: NA

Description: All stainless steel, door sill - 14 gauge stainless steel sill, door pan – high strength polystyrene, floor pan stainless steel, gas connections behind center door mullion

Memo:

Room Location: RM 249

Special instructions: Installation not included

Project: 37th B1-B Squadron Operations Facility
Ellsworth AFB, SD
PN FXBM993001

PROCUREMENT INFORMATION

8 Item Codes: AE- GW-1.A

Item Name: Glasswasher

Manufacturer:
Perlick Corporation
8300 West Hope RD
Milwaukee, WI 53224
800-558-5592

GSA Contract number: NA
Contract expiration date: NA
FSC Group: NA
SIN: NA
MOL: NA

Model Name: Glasswasher

Model Number: PKBR24

Dimensions: 24"W X 24"D

Finish Name/Number: Stainless steel

Fabric Name/Number: NA

Description: All stainless steel, top mounted instrument panel w/ upper and lower wash arms, pitched vinyl-coated glass racks, metal dividers separates load and wash areas, peristaltic metering pumps w/ hand adjusted controls dispense detergent, sanitizer and rinse aid

Memo:

Room Location: RM 249

Special instructions: Glass washer must be installed w/ a full flow shut off valve, water hammer arrestor and union. Installation not included

Project: 37th B1-B Squadron Operations Facility
Ellsworth AFB, SD
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PROCUREMENT INFORMATION

9 Item Codes: AE- IM-1.A

Item Name: Icemaker

Manufacturer:
Manitowoc Ice Inc
2110 SO 26th ST
Manitowoc, WI 54221
920-682-0161

GSA Contract number: NA
Contract expiration date: NA
FSC Group: NA
SIN: NA
MOL: NA

Model Name: Icemaker

Model Number: Q model 210

Dimensions: 26''w x 29''d 32 ½''h

Finish Name/Number: Stainless steel

Fabric Name/Number: NA

Description: Stainless steel, up to 220 lbs daily ice production, slide up and in bin door

Memo: 5 year warranty

Room Location: RM 249, RM 135 Quantity 1 ea

Special instructions: Installation not included

Project: 37th B1-B Squadron Operations Facility
Ellsworth AFB, SD
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PROCUREMENT INFORMATION

10 Item Code: AE-MH-1.A

Item Name: Hood/Microwave

Manufacturer: Whirlpool

Model Number: GH9185XL

Dimensions: 1.8 Cu. Ft.

Finish Name/Number: Stainless on Black

Description: Microwave/Hood Combination

Item Location: Room 122 Training

Special Instructions: Provide Vent and Electrical connections as req'd.

Project: 37th B1-B Squadron Operations Facility
Ellsworth AFB, SD
PN FXBM993001

PROCUREMENT INFORMATION

11 Item Code: AE-PA-1.A

Item Name: Public Address System

Manufacturer:

Contractor: Pratt Audio Visual
4509 S 9th St.
Omaha, NE 68132

Model Name:

Model Number:

Dimensions:

Finish Name/Number:

Description: Complete systems with mixers, racks, speakers speaker boxes, amplifiers, cable and installation

Item Location: Duty Desk Rm 202, Storage Rm 218, CCQP Rm 259, debrief Rm 162

Special Instructions: Equipment rack in rm 218, Microphones in Rm 202, 259, and 162, Provide conduit as needed.

PROCUREMENT INFORMATION

12 Item Codes: AE- PR-1.A

Item Name: Projector/Audio Video System

Manufacturer:
Pratt Audio Visual Corporation
4509 SO 96th ST
Omaha, NE 68132
402-592-6970

GSA Contract number: NA
Contract expiration date: NA
FSC Group: NA
SIN: NA
MOL: NA

Model Name: Projector/Audio Video System

Model Number: System to consist of the following:

3- Sharp XG-P25XU LCD Projectors. 1024 x 768 Resolution at 4000 lumens of brightness.

1- Extron Crosspoint 128HVA RGBHV Matrix Switcher

1- JVC HR-S3901U SVHS VCR

1- JVC XV-S300BK DVD Player

1- Elmo HV-5000XG Digital Document Camera

4- Extron RGB-109xi Computer Interfaces- { you will need one of these per CPU and Document camera that you want in the system. }

3- Extron DVS204 video scalers { you will need one of these for every video source you want in the system }.

1- Polycom Video teleconferencing systems

1- Sony EVI-D1000 video teleconferencing camera

6- Bose Model 32 ceiling speakers

1- Bose Model 1600 amplifier

1- Bose Lifestyle 50 surround sound audio system with am/fm and a C.D. player

1- AMX Equipment Control system with two touchpanels

1- InterM MX-1424 Audio mixer

1- JVC RX-9010 surround sound receiver

Project: 37th B1-B Squadron Operations Facility
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AE-PR-1.A

1- Middle Atlantic Equipment console

1- System Programming

1- Cables and Connectors

Dimensions: NA

Finish Name/Number: NA

Fabric Name/Number: NA

Description: Three projectors w/ teleconferencing, VCR, DVD, CD player, digital document camera, surround sound, speakers, amplifiers, w/ microphone to be installed on podium, two touch panels

Memo: All of the above components are required for the briefings held in the auditorium

Room Location: RM 224

Special instructions: Installation included, need to coordinate all power requirements. Installation included.

Project: 37th B1-B Squadron Operations Facility
Ellsworth AFB, SD
PN FXBM993001

PROCUREMENT INFORMATION

13 Item Codes: AE- PR-1.B

Item Name: Projector/Audio Video System

Manufacturer:
Pratt Audio Visual Corporation
4509 SO 96th ST
Omaha, NE 68132
402-592-6970

GSA Contract number: NA
Contract expiration date: NA
FSC Group: NA
SIN: NA
MOL: NA

Model Name: Projector/Audio Video System

Model Number: System to consist of the following:

1-Sharp PG-C45XU LCD Projector. 1024x768 resolution at 2400 lumens of brightness

1- Samsung XC2000 Combination DVD/ VCR Player

11- Extron P/2DA2Plus Interface

1- JVC RX-7020V audio receiver

1- EVI 3.2w pair wall speakers

1- Cables and connectors

Dimensions: NA

Finish Name/Number: NA

Fabric Name/Number: NA

Description: One projector, VCR, DVD and speakers

Memo: All of the above components are required for the briefings held in these rooms

Item location: RM 226, RM 227, RM 228, RM 231, RM 232, RM 232 Quantity 2 ea, RM 249, RM 104, RM 120

Special instructions: Installation included, need to coordinate all power requirements

Project: 37th B1-B Squadron Operations Facility
Ellsworth AFB, SD
PN FXBM993001

PROCUREMENT INFORMATION

14 Item Codes: AE- PR-1.C

Item Name: Projector/Audio Video System

Manufacturer:
Pratt Audio Visual Corporation
4509 SO 96th ST
Omaha, NE 68132
402-592-6970

GSA Contract number: NA
Contract expiration date: NA
FSC Group: NA
SIN: NA
MOL: NA

Model Name: Projector/Audio Video System

Model Number: System to consist of the following:

- 1- Sharp PG-C45XU LCD Projector. 1024x768 resolution at 2400 lumens of brightness
- 1- Samsung XC2000 Combination DVD/ VCR Player
- 1- Extron P/2DA2Plus Interface
- 1- JVC RX-7020V audio receiver
- 1- Polycom Video teleconferencing system
- 1- EVI 3.2w pair wall speakers
- 1- Cables and connectors

Dimensions: NA

Finish Name/Number: NA

Fabric Name/Number: NA

Description: One projector w/ teleconferencing, VCR, DVD

Memo: All of the above components are required for the briefings held in these rooms

Item location: RM 255, RM 161 Quantity 1 ea

Special instructions: Installation included, need to coordinate all power requirements

Project: 37th B1-B Squadron Operations Facility
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PROCUREMENT INFORMATION

15 Item Code: AE-RO-1.A

Item Name: Range/Oven

Manufacturer: Whirlpool

Model Number: GR475LXL

Dimensions: 4.65 Cu. Ft

Finish Name/Number: Black on Stainless

Description: Free Standing electric self-cleaning Range with ceramic glass cooktop

Item Location: Room 122 Training

Special Instructions: Provide Electrical connections as req'd.

Project: 37th B1-B Squadron Operations Facility
Ellsworth AFB, SD
PN FXBM993001

PROCUREMENT INFORMATION

16 Item Codes: AE-SC-1.A

Item Name: Server Cabinet

Manufacturer:
Wrightline
160 Gold Star Boulevard
Worcester, MA 01606
800-225-7348

Contractor:
Wrightline
160 Gold Star Boulevard
Worcester, MA 01606
800-225-7348

GSA Contract number: GS-29F-0100G
Contract expiration date: April 30, 2006
FSC Group: 71, Part 1
SIN: 711-2
MOL: \$200,000

Model Name: Paramount Enclosure System

Model Number: consists of the following:
JW842440, JFTK24, JSPP8440, JDF8424L, JDPS4242, JDP8424L, JTPP2440, JATFT244, JCSTR02, JSFS2440

Dimensions: 84”h x 24w x 40d frame

Finish Name/Number: NA

Fabric Name/Number: NA

Description: All steel heavy-duty construction w/ ventilated fronts, sides and top, anti-tip frame, three adjustable shelves.

Memo:

Room Location: RM 251

Special instructions: Installation not included

Project: 37th B1-B Squadron Operations Facility
Ellsworth AFB, SD
PN FXBM993001

PROCUREMENT INFORMATION

17 Item Codes: AE-SK-1.A

Item Name: Sink

Manufacturer:
Perlick Corporation
8300 West Hope RD
Milwaukee, WI 53224
800-558-5592

GSA Contract number: NA
Contract expiration date: NA
FSC Group: NA
SIN: NA
MOL: NA

Model Name: Two Tank Sink

Model Number: TSD22C

Dimensions: 18 9/16"D X 24W

Finish Name/Number: Stainless steel

Fabric Name/Number: NA

Description: Stainless steel, backsplash 8"h w/ 1" return at top, mechanically fastened and sealed w/ steel support brackets, legs 1 5/8" tubular steel w/ 1" adjustable thermoplastic leg, tanks are 10"x 14" 9 1/4"d

Memo:

Room Location: RM 249

Special instructions: Installation not included

Project: 37th B1-B Squadron Operations Facility
Ellsworth AFB, SD
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PROCUREMENT INFORMATION

18 Item Code: AE-W-1.A

Item Name: Washer

Manufacturer: Whirlpool

Model Number: GSW9650L

Dimensions: 26" x 25" x 43"

Finish Name/Number: White

Description: Resource Saver Washer

Item Location: Room 108 Life Support E.M.

Special Instructions: Provide Plumbing and Electrical connections as req'd.

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